THE UNIVERSITY OF ALBERTA

A DESCRIPTIVE ANALYSIS OF THE VOCATIONAL, PRE-VOCATIONAL AND INDUSTRIAL ARTS PROGRAMS IN RESIDENT SCHOOLS FOR THE HEARING IMPAIRED IN CANADA

by

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled A DESCRIPTIVE ANALYSIS OF THE VOCATIONAL, PRE-VOCATIONAL AND INDUSTRIAL ARTS PROGRAMS IN RESIDENT SCHOOLS FOR THE HEARING IMPAIRED IN CANADA, submitted by JAMES ALOYSIUS DUNNE in partial fulfilment of the requirements for the degree of Master of Education.

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ABSTRACT

From 1973 to 1975 there was an increase in enrollment in schools and classes and in the number of teachers for hearing impaired children in Canada. The purpose of this study was to describe in detail the nature and extent of vocational, pre-vocational and industrial arts programs of studies that were offered in residential schools for the hearing impaired in Canada during the 1975-76 school year.

The population for this study included all 33 schools and classes that offered a program of studies for the hearing impaired in Canada. From this population a stratified sample of 9 schools was taken that included only those schools that were classified as a residence school and which offered programs in vocational, pre-vocational and industrial arts education. Questionnaires were distributed to the teachers in these 9 schools who taught these designated programs. Thirty-two teachers participated in the study.

There were 29 questions on the instrument and these were divided into six categories: school background information, instructor background information, hearing impaired education, program objectives, the program, and the curriculum.

The findings of the study showed that 9 of the participating schools offered a program of studies in

academic education, 6 offered vocational education, 5 offered pre-vocational education and 8 schools offered a program of industrial arts. These programs were all funded and governed by provincial governments. One school received additional federal funds. Most schools were adequately funded. A total of 31 different courses were offered by the participating schools.

All teachers who participated in the study were qualified to some degree in the area in which they taught and most had received training in deaf education. Almost all participants, with the exception of those from Ontario, used the method of Total Communication exclusively with their students, who were frequently multi-handicapped.

The length of class periods and the number of class periods taught per week varied greatly among the participating teachers. All teachers spent more time teaching the practical aspects of their course than teaching theory. Twenty-two of the participants stated that curriculum guides had been developed for their program. A lack of communication between academic and psychomotor skill development teachers appeared evident in most schools involved in the study.

This study has resulted in the formulation of three major recommendations:

1. That each resident school for the hearing impaired in Canada prepare for publication an account of its

history, programs and teaching staff.

2. That a longitudinal follow-up study be conducted to determine the number of graduates from schools for the hearing impaired who enter the trade for which they were prepared.
3. That a research investigation be conducted on the kinds of psychomotor skill development courses that are offered to hearing handicapped students enrolled in day class and non-resident schools in Canada.

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CHAPTER I

INTRODUCTION

According to the statistics for 1975, there were 3,704 auditorally handicapped students in Canada in either a residence school or a day school with a curriculum designed for these students. These 39 schools and classes were scattered across the country. These statistics show that close to 70 per cent of these students were living in residence in 12 of these schools. The remaining 1,190 of these students were living at home and attended one of the other 27 schools across the country. (American Annals of the Deaf, 1975, pp. 146-9)

While in school these students are taught in addition to academic subjects, communication skills that permit them to communicate with both those who are auditorally handicapped and those who do not have this physical handicap. In addition to learning these cognitive skills, these students are also taught psychomotor skills that they might use as a worker in a productive society.

An ever increasing number of enrollments in schools for the hearing impaired each year results in a greater number of graduates from these schools. It is evident from data in Table I that there has been an increase in enrollment

in schools and classes for hearing impaired children from 1973 to 1975; that there has been an increase in the number of schools where hearing impaired children are taught; and that there has been an increase in the number of teachers in schools for the hearing impaired. These data also show that the number of residence schools had increased from 11 to 12 and that there was an increase in the number of day classes from 24 to 27.

TABLE I

INCREASE IN NUMBER OF STUDENTS, STAFF AND CENTERS FOR DEAF EDUCATION 1973-75 IN CANADA

	1973[a]	1975[b]	Increase
Students in residence schools	2,146	2,514	368
Students in day schools and classes	1,168	1,190	22
Total Students	3,314	3,704	390
Teachers in residence schools	598	736	132
Teachers in day schools	177	288	111
Total Teachers	775	1,024	243
Number of residence schools	11	12	1
Number of day schools and classes	24	27	3
Total Schools	35	39	4

Source: [a]Statistics Canada (1973), pp. 4-11.

[b]American Annals of the Deaf (A.A.D.) (1975), p. 179.

Although at some time in the future the majority of these students and those who will follow them will be graduating into a hearing world and become active members of a productive society, a formal research investigation has never been conducted in Canada to determine where and by whom and what courses these students take in school that will provide them with psychomotor skills they will need to become a skilled employee in an occupation of their choice and contribute to Canada's pool of skilled manpower.

A review of the standard indices used to report the findings of educational research indicated that a formalized research study had not been completed which describes the vocational, pre-vocational and industrial arts programs of studies offered in the residence schools for the hearing impaired in Canada. These are the courses which are normally used to provide a student with either an awareness level of skill or an entry level of skill for a selected occupation.

STATEMENT OF THE PROBLEM

The purpose of this study was to describe in detail the nature and extent of vocational, pre-vocational, and industrial arts programs of studies that were offered in the residential schools for the hearing impaired in Canada during the 1975-76 school year.

OBJECTIVES OF THE STUDY

This study had the following supporting objectives:

1. To describe in detail the educational background of the teachers who taught psychomotor skill development courses to auditory handicapped children in the schools selected to participate in the research.
2. To describe the kinds of courses in which psychomotor skills were taught to the hearing handicapped so that they could develop the necessary competencies to enter the world of work as a beginning worker.
3. To determine the program objectives for teachers who taught skill development courses to students enrolled in the schools that participated in the research.
4. To determine the nature of the curriculum used in the schools, in its development and implementation.

LIMITATIONS OF THE STUDY

This study had the following limitations:

1. The study was limited to those vocational, pre-vocational and industrial arts teachers in the 9 residential schools for the hearing impaired in Canada invited to participate in the study.
2. The study was limited to the accuracy of responses made by participants to the statements on the research instrument.

3. The study was limited by the extent to which teachers who participated in the study furnished data to the researcher through the research instrument.

POPULATION OF THE STUDY

Although there were a considerable number of regular day classes for the hearing impaired, 27 in all across Canada, there were only 12 schools classified as residential schools for students with this handicap. Statistics in Table I show that 2,514 of the 3,704 hearing impaired students in Canada attend residential schools in the country.

The population for this study included all 39 schools and classes that offer a program of studies for the hearing impaired in Canada. From this population a stratified sample was taken that included only those schools that were classified as a residence school.

Teachers in the 12 residence schools were stratified into two sub-populations. The first sub-population included those teachers who taught academic subjects. The second sub-population included those teachers who were responsible for teaching vocational, pre-vocational and industrial arts courses.

The latter sub-population made up the sample for this study.

OPERATIONAL DEFINITIONS

The following are operational definitions that are exclusive to this study and are used throughout this report.

Hard of Hearing; Hearing Impaired/Deaf

Because of confusion and variance in terminology directed at the hearing handicapped, in 1938, the Committee on Nomenclature of the Conference of Executives of American Schools for the Deaf formulated classifications which have become standard definitions for researchers in deafness and deaf education. Because of the wide acceptance of these definitions by both writers and researchers in deaf education many of these definitions have appeared in the writings of respected educators and researchers who write on the topic of the hearing impaired and their problems. Among the more commonly used definitions by these authorities include the terms hard of hearing and hearing impaired/deaf. The definition for hard of hearing given by Kirk was found acceptable for this study as was the definition for hearing impaired/deaf by DiCarlo.

Kirk (1972) defined hard of hearing as:

> those in whom the sense of hearing although defective is functional with or without a hearing aid. (p. 240)

DiCarlo (1964) gave the following definition for hearing impaired/deaf:

> those in whom the sense of hearing is non-functional for the ordinary purposes of life. (p. 45)

Aphasia

Although many authors have formulated a definition for the term aphasia, the one developed by Davis and Silverman (1964) was selected as one of the most succinct in the professional literature. These authorities gave this definition for aphasia:

> loss or impairment of the capacity to use words as symbols of ideas. (p. 556)

Hearing: Residual Hearing

Levine, in the glossary at the end of his book, The Psychology of Deafness, includes definitions for the terms hearing and residual hearing. The definitions for these terms were formulated by several reputable American medical associations and were modified or rephrased by Levine in his book. The definition for hearing given by Levine states:

> perception of sound by means primarily of the sensory apparatus of the cochlea (vibrating membrane) in the inner ear. (p. 347)

Levine defines the term residual hearing as:

> the hearing still retained by a hearing impaired person. (p. 348)

Sign Language

While there have been many authors who have written on the subject of hearing impairment and deafness and have discussed sign language, its implementation and effect, few have given a forthright definition for the term "sign language." Northcott (1973) is among those who have

formulated a definition for the term sign language. Northcott considers sign language as a communication system for the deaf which is:

> an orderly system of manual gestures and symbols for communication of thoughts and ideas. (p. 281)

Industrial Arts

There are a number of definitions for the term industrial arts that appear in the professional literature that is available to industrial arts teachers. Although these definitions are quite similar, they are not totally congruent. The definition given by Feirer and Lindbeck (1969) in their book, Industrial Arts Education, was found acceptable for this study. These authors gave the following definition for the term industrial arts when they said:

> By definition, industrial arts is the broad study of tools, materials, equipment, processes, products, and occupations of industry, pursued for general education purposes in the shops and laboratories of schools. (p. 15)

Vocational Education

Evans (1971) in Foundations of Vocational Education defines the term vocational education in the following manner:

> In its broadest sense vocational education is that part of education which makes an individual more employable in one group of occupations than in another. (p. 1)

Pre-Vocational Education

The Newfoundland Department of Education (1973) in its curriculum outline for pre-vocational programs for its

schools provided this definition for the term pre-vocational education. It describes pre-vocational education as

> Providing a more comprehensive curriculum and a continuing and broadening of the students' general education aimed at developing their full potential. It should prepare a student to continue his education at university, college or vocational school, or pursue other educational goals. (p. 19)

SIGNIFICANCE OF THE STUDY

Although there is a dearth of information available on the economic success of deaf adults, a study conducted by Reich and Reich in 1974 found that for deaf workers in Ontario there was less advancement and their salaries were lower than a comparable hearing worker (p. 76). If the conclusion of this single piece of research can be extrapolated to deaf workers of the other provinces it may have implications for educators who taught these workers their psychomotor skills. The educational opportunities that are available in programs of studies in vocational, pre-vocational and industrial arts in resident schools for the deaf have never been described nor presented in a single volume.

This study may have significance in that it will provide a description of the vocational, pre-vocational and industrial arts programs that are available in residence schools for the hearing handicapped in Canada.

The results of this study may be useful to other researchers and writers interested in psychomotor skill development for the hearing impaired.

METHODOLOGY

The following methodology was used in this study to bring it to a successful conclusion.

To collect pertinent data for the study a survey was made of vocational education teachers, pre-vocational education teachers and industrial arts teachers of the schools selected to participate in the study. The instrument that was designed to collect the data was a questionnaire. The procedure used to design the research involved a library search of reference books solely devoted to research instruments and instrument design. The result of this research instrument was to assist the researcher in the design of the research questionnaire. The research instrument and the detailed procedure used to design the instrument is fully described in Chapter III of this report.

The first draft of the designed instrument was placed in the hands of selected staff members at the Newfoundland School for the Deaf for their reaction. From their recommendations a second draft of the instrument was prepared.

A copy of this draft of the questionnaire was sent to the thesis supervisor for review and criticism. There were a number of recommendations that were made by this reviewer. Two of the major recommendations that were made were: to sequence statements of the research instrument correctly and to ensure that statements on the questionnaire were free of

ambiguity and were properly stated to convey their true meaning.

From the reaction of these reviewers the research instrument was revised incorporating the recommendations that were made by these reviewers. The research instrument is described in detail in Chapter III.

To pretest the research instrument it was used in a pilot study. The purpose of the pilot study was to determine if the instrument would yield data that could be used in the research. Another purpose of the pilot study was to determine if the research instrument that was designed would need to be revised before it was used in the major investigation. The pilot study is described in detail in Chapter III of this thesis.

A letter was sent to the superintendents of the resident schools for the deaf in Canada whose schools would be participating in the study. The purpose of this letter was to request permission for the vocational, pre-vocational and industrial arts teachers in each school to complete the research questionnaire. All of the superintendents who were surveyed complied to the request of this letter and distributed questionnaires to the specified teachers employed in their school.

Each teacher received a questionnaire accompanied by a covering letter which outlined the purpose of the study and requested their cooperation in completing the questionnaire.

When 3 weeks had elapsed from the time that the questionnaires were initially distributed, those schools which had not returned completed questionnaires were contacted by telephone to request the return of the completed instrument. All schools surveyed were represented in the final return and approximately 50 per cent of all the teachers who had been surveyed replied.

From the information gathered and tabulated from the questionnaires a description of the vocational, pre-vocational and industrial arts programs of the resident schools for the deaf in Canada was compiled and recommendations for further study were made.

CHAPTER II

REVIEW OF THE LITERATURE AND RELATED RESEARCH

INTRODUCTION

Chapter I of this report presented an introduction to this study, stated the nature of the problem and listed the objectives and limitations of the research. Also discussed were the population of the study, the operational definitions and the significance of the study. It also gave a brief overview of the methodology employed in the collection of data.

Chapter II will discuss the history of education of the deaf in Europe, the United States and Canada. It will discuss teacher training programs that are available in Canada to those who wish to teach the hearing impaired and it will present some causes of deafness as they have been discerned by researchers in this field. Some of the learning disabilities which are subsequent to deafness will be examined as well as the modes of communication that have been developed to communicate with the hearing impaired. Deafness and its association with additional handicaps will be discussed, followed by a report on the incidence of hearing impaired persons in Canada. The Canadian aspects of both federal legislation governing the deaf and non-university post-secondary opportunities for the deaf will be stated. An

outline will also be given of the agencies which are concerned with the deaf in Canada.

In reviewing related research to this study the researcher found that very little literature was available on the subject of education for the deaf in Canada. An extensive E.R.I.C. (Educational Resources Information Center) search was completed; however, this search did not uncover an abundance of information applicable to this study. For portions of this chapter the researcher had to rely for information from a limited number of Canadian magazines related to deaf education, personal interviews with respected educators of the deaf in Canada and some data that were acquired with the research instrument.

HISTORY OF THE DEAF IN CANADA

This portion of the review of the literature will be divided into three sections: it will deal separately with the history of the education of the deaf in Europe, in the United States and in Canada. The education of the deaf in the United States, at its beginning, was very dependent upon European concepts of deaf education, and in turn the development of Canadian education for the hearing handicapped was dependent upon American concepts of deaf education. It is impossible, therefore, to consider the history of education of the hearing handicapped in Canada without also considering its evolution in Europe and the United States.

Europe

The auditory-handicapped child historically has been considered to be "deaf and dumb" and was generally relegated to second class citizenship as well as to an education that could be considered second class. In early times society had little place for any kind of handicapped person and often their presence presented an economic calamity for the state. The Spartans' view was that imperfect children should be permitted to die of exposure (Giangreco, 1970, p. 5). Roman infants who did not meet accepted standards of physical perfection were laid at the base of the statues in the public square to be torn to pieces by dogs (Bender, 1970, p. 22). Romulus later revised this practice so that children who were likely to become a liability on the State were not murdered until age three (Bender, 1970, p. 23). The Greeks were similarly harsh in their treatment of the disabled (DiCarlo, 1964, p. 11).

Society's first acceptance of the handicapped occurred when the Hebrews enacted laws which established the legal right of the deaf and/or mute. DiCarlo (1964) in writing about these laws wrote the following:

1. The deaf who had speech were allowed to transact business but not to own real property.
2. Those who were able to hear, but were mute, had no legal restrictions.
3. Those who were both deaf and dumb could not own property, engage in business, or have the right to act as witness. The deaf, as a group, were not

> permitted to marry in a ceremony conducted by signs. But all deaf people were protected from bodily harm because it was considered a crime to harm a deaf-mute. (p. 11)

Giangreco (1970) wrote that when the Romans put forth laws in the form of the Justinian code, part of this code included the legal rights of the deaf. Prior to the passage of the Justinian code "deaf and dumb people" were without legal rights and obligations and guardians were appointed for them by law to have charge over their affairs (p. 4).

The Christian Church in its adherence to Augustine's neo-Aristorelian philosophy did not offer educational opportunities to the deaf for it followed Aristotle's dictum that "the ear is the organ of education" and therefore the deaf were rendered uneducable (Burnes, 1967, p. 7; DiCarlo, 1964, p. 13).

The earliest instance of education given to the deaf was told by the Venerable Bede about the year 691. He said that Bishop John of York had taught a deaf person to speak and to read lips. This accomplishment was at that time thought to be a miracle (Burnes, 1967, p. 7).

In the fifteenth century, in a new trend toward humanism, Rudolph Agricola, hypothesized in a scholarly book, written in Latin, that the deaf were able to communicate through writing (Bender, 1970, p. 32). This hypothesis was examined closely by Jerome Cardan in the middle sixteenth century. According to DiCarlo (1964), Cardan believed the deaf were able to express themselves and employ their powers

of reason and logic through reading and writing (p. 14). Cardan was considered a great genius and his words carried great weight according to Burnes (1967, p. 8), but it was Ponce deLeon, a Spanish monk of the sixteenth century, who is generally considered by historians as being the first teacher of deaf-mutes, although his students came only from the ranks of nobility (DiCarlo, 1964, p. 15).

During the period of the Renaissance, many medical discoveries pertaining to the ear were made, but these discoveries had no effect upon the education of the deaf.

The seventeenth century witnessed increased interest in education for the deaf. Among those who advanced ideas which were eventually to affect the educative process of the auditory handicapped were the humanists such as Johann Amos Comenius, Francis Bacon, and John Locke. Among those who published books pertaining to their experience in teaching the deaf were a Spanish monk, Juan Paulo Bonet (1620), an English doctor, John Bulwer (1643) and a Scotsman, George Dalgarno (1680) (Streng et al., 1955, p. 3).

In the latter half of the eighteenth century a period of enlightenment on deaf education began to emerge. During this period of time almost simultaneously, three schools were opened. One of these schools was established in France by the Abbe de L'Epee, another in Germany by Samuel Heinicke, and a third in Great Britain by Thomas Braidwood (Burnes, 1967, p. 9). It was the Abbe de L'Epee who was to exert the

greatest influence upon education of the deaf for it is he who is generally credited with devising the system of signs that, essentially, is still in use in modern times (Burnes, 1967, p. 9).

Bender (1970) explained that it was Roch Sicard who succeeded the Abbe de L'Epee as the foremost educator of the deaf in France at this time. Sicard continued the work on the representation of the manual system that de L'Epee had begun (pp. 90-91). According to Bender, one of Sicard's favorite pupils was Massieu who was to instruct Thomas Gallaudet, the founder of deaf education in the United States, and in doing so, caused Sicard's methods to make a lasting impression on the American concept of deaf education (p. 126).

It was Heinicke of Germany who first tried to establish the oral method of instructing the deaf. This fact has been verified in the writings of DiCarlo (1964, p. 25) who wrote that Heinicke's reputation as a teacher gave rise to the question of appropriate methodology for education of deaf children (p. 26). This controversy still has not been resolved by educators of the deaf today.

In subsequent years, many men were to have a lasting effect on the development of educational policy for schools for the deaf. DiCarlo (1964) includes in this group of renowned educators of the deaf Watson and Arnold of England, Degerando of France and Jager and Hill of Germany (pp. 36-38). According to DiCarlo (1964), by the end of the nineteenth

century education for the deaf had been established in Ireland, Wales, Sweden, Scotland, Switzerland, the Netherlands, Austria, Italy, Spain, England, France and Germany (p. 38). By this time the European concept of education for the deaf had had lasting effects upon the development of education for the hearing impaired in the United States and, subsequently, in Canada.

The United States

In the United States, the first recorded attempt to teach a deaf-mute was at Rowley, Massachusetts in 1679 (Streng et al., 1955, p. 3). It was not until early in the nineteenth century, however, that a great step was taken in the process of developing an educational program for the deaf. In 1815, a group of citizens of Hartford, Connecticut, were very interested in helping the deaf in New England, and formed a society to raise money to send Reverend Thomas H. Gallaudet to Europe to study methods for teaching the deaf (Ramger, 1967, p. 13). In April of 1817, the American Asylum for the Deaf and Dumb was opened in Hartford. This school was supported financially by legislative appropriations and private donations (DiCarlo, 1964, p. 30). Following the lead of Hartford, other schools were opened in New York and Philadelphia and from there, over the years, these schools have spread throughout the country.

Thirty years after the founding of the school in Hartford, the Bells, Alexander Melville and his son, Alexander

Graham, became a powerful influence in the history of the deaf in the United States. (Alexander Graham Bell's wife was deaf). They devised a system of "Visible Speech" and became very involved in teacher training (DiCarlo, 1964, pp. 33-34).

From these modest beginnings the movement of deaf education has shown tremendous expansion. For the year 1976 the American Annals of the Deaf reported there were a total of 79 residential schools for the deaf, 93 day schools and 499 day classes operating in the United States. The first college in the world for the deaf was established in the United States. Gallaudet College located in Washington, D.C., was established well over one hundred years ago, and was named after Thomas H. Gallaudet, the renowned deaf educator.

Canada

A review of the literature indicates that the history of the education of the deaf in Canada is scant. The first record of a school to teach the hearing handicapped in Canada was the school established in Halifax, Nova Scotia in 1856. According to the Deaf Canadian (Spring, 1975) the school started from a dream in the mind of Father George Tait, a Scottish emigrant, who was deaf. Father Tait was able to find partial release from his bondage through visual communication and he felt that he could pass this

wonderful freedom on to others who had the same disability, deafness. Mary Ann Fletcher, his first pupil, was to benefit from Father Tait's dream.

Another Scottish emigrant by the name of William Grey who was deaf and also a teacher helped Father Tait in his work. These two men were responsible for establishing a school in Halifax for those suffering from a hearing and speech handicap. At first only four students attended the school but in time enrollment increased and other teachers were added to the school staff (The Deaf Canadian, Spring-Summer, 1975, p. 13). In the early 1960's the school was moved to its present site at Amherst, Nova Scotia.

Following the inception of deaf education in Canada in Nova Scotia, the movement for educating the deaf swept westward. Quebec was the next province to establish a program for educating the deaf. This program was administered by the French. Later, centers in Ontario sprang up. The first one to be established in that province was in Hamilton, then Toronto and Belleville (Personal interview with Dr. Gary Bunch, July, 1976).

It was in Belleville in 1870 that the first Ontario school for the deaf for children was opened. It was through the efforts and persistence of a grammar school teacher, J.B. McGann, that in 1858 the first class for deaf children was established in Toronto. McGann was instrumental also in establishing the school at Belleville which was the result

of his commitment to the education of the deaf in Ontario (The Deaf Canadian, Nov.-Dec., 1974, p. 8).

It was sometime later in 1925 that the movement reached the west coast when the first school was opened in British Columbia. Seven years later in 1932, Saskatchewan established its school for the hearing impaired (Information gathered from questionnaire). These two schools served the Western Provinces until 1955 when the Alberta Government decided to make a total commitment for the education of the hearing impaired in the province. A provincial school for the deaf was built in Edmonton so that there was no need for deaf students to leave the province to receive an education.

In 1963, the second school for the hearing impaired was established in Ontario at Milton. This school was opened because of the increase in enrollment at Belleville and also because of the travel that was necessary for some students to attend the one school at Belleville.

Newfoundland, in 1964, was the next province to establish a provincial school for the deaf. Prior to 1964 students from the province attended the Interprovincial School for the Deaf at Amherst, Nova Scotia, or they were sent to Montreal for their education. Since 1965 the school has been housed in temporary facilities near Torbay, Newfoundland.

The Province of Manitoba in 1965 established at Winnipeg a center for the hearing impaired to serve the needs

of the province. The most recent school for the hearing impaired in Canada was opened in late 1973 in Ontario. It was evident in 1967 that with the growing population of hearing impaired students in Ontario that the school at Milton would soon reach its capacity. Because of the need for additional space the Robarts School was built at London, Ontario, to serve the needs of the province's increased population of hearing handicapped (The Deaf Canadian, Nov.-Dec., 1974, pp. 8-11).

Besides the 12 residence schools that currently exist in Canada (1975) there are also 27 day schools and classes throughout the country (A.A.D., 1975, pp. 145-9). From the one school that was established in 1856 the education of the hearing impaired in Canada has grown to 39 schools and classes.

These schools provide a variety of educational programs to their students. These programs range from pre-school, introductory training for 3-5 year olds, to high school, academic and vocational training for 15 to 19 year olds (A.A.D., April, 1975, pp. 145-9). Physical education, vocational education, pre-vocational education, industrial arts, home economics and driver training are just some of the courses that complement the academic courses offered at these schools (Information taken from research questionnaire).

Providing these programs to hearing handicapped students demands teachers who are highly skilled, trained,

with a broad academic knowledge and wide practicum experience, as well as being dedicated to teach the individual who is hearing handicapped (Wallace, 1973, p. 34).

TEACHER TRAINING PROGRAMS

There are several programs in Canada at the tertiary level which train teachers in the education of the hearing impaired.

Quebec

McGill University in Montreal offers a Master's Degree in Oral Rehabilitation and Education of Children with Hearing Impairment (McGill Calendar, 1975). It is a one year course with practical experience in dealing with hearing impaired children. A prerequisite for this program is that the candidate possess a Bachelor degree or its equivalent.

New Brunswick

A bilingual teacher-training program was started at the Interprovincial School for the Deaf at Amherst, Nova Scotia in 1972. In the fall of 1974 this program was designated as a Master of Deaf Education under the auspices of the University of Moncton. This program consists of 16 courses taken at the Interprovincial School and a teaching practicum (University of Moncton Calendar, 1975). It is the only such program in the Eastern Provinces.

British Columbia

The University of British Columbia offers a diploma in special education as one of its options. This is a Diploma in the Education of the Deaf. This program is directed towards the preparation of teachers of children who have hearing impairment. It consists of one year of full time study and includes a minimum of twelve units and an extensive practicum (University of British Columbia Calendar, 1976-77, p. 107).

Saskatchewan

The University of Saskatchewan at Saskatoon offers courses in deaf education which is part of an option in the Bachelor of Education Degree Program with a major in deaf education. This university also offers summer school courses in deaf education for teachers who wish to upgrade their qualifications (Personal interview with Dr. Gary Bunch, July, 1976).

Ontario

Sir James Whitney School in Belleville offers a teacher training program which is one year in length. Since the training is undertaken at the school for the hearing impaired, in-service teaching and training is extensive (Personal interview with Dr. Gary Bunch, July, 1976).

Alberta

A proposal has been made to the University of Alberta through the Edmonton Public School Board and the Alberta Co-ordinating Council on Deafness that a diploma and a Master's Degree Program in deaf education be implemented. It is hoped that these programs will be offered in the fall of 1977 (Personal interview with Cathy Judkins, Edmonton Association for the Hearing Impaired, 1976).

Teachers in residential schools in Canada have also received their qualifications from in-service training, by attending summer schools overseas in either England or Australia (Wallace, 1973, p. 35). Other teachers from Canada have attended schools and universities in the United States to attain their qualifications to teach hearing impaired students. There are a total of 46 post-secondary institutions and 71 university programs in the United States which offer this type of training (A.A.D., April, 1976).

According to the statistics for Enrollment and Staff in Schools for the Blind and Deaf in 1976, there were a total of 472 instructors in the schools for the deaf in Canada. Three hundred and seven of these teachers obtained a specialist certificate accounting for 65 per cent of the total number of teachers (p. 14). It can be seen that teachers in these schools for the deaf are becoming more specialized in the area of deaf education.

CAUSES OF DEAFNESS

A review of the literature concerning the onset of deafness reveals that there are innumerable causes for this disability which has no respect for age.

In a study conducted by Jensema and Mullins in 1974, it was found that 90 per cent of the subjects surveyed were hearing impaired from birth or had lost their hearing before they were three years old (p. 705). Among the factors which caused deafness at birth were, maternal rubella, heredity, prematurity, Rh incompatibility, pregnancy complications and birth trauma. Mindel and Vernon (1971, pp. 25-26, three years earlier, had listed similar causes for the onset of deafness. Information supplied by Kirk supports the causes of deafness at birth given by Jensema and Mullins, and Mindel and Vernon (1972, pp. 247-8).

These same five authors also concur on the causes of deafness after birth. Included in the listing by Jensema and Mullins (1974) are: meningitis, mumps, measles, otitis media (inflammation of the middle ear), trauma after birth, high fever and infections (p. 702). To this complication of causes of deafness after birth, Kirk adds otosclerosis (the formation of spongy bone in the capsule bone in the ear), hereditary degeneration of the auditory nerve, concussions, accidents, subjection to prolonged high frequency sounds, intracranial tumors, cerebral hemorrhage, toxic effect of certain drugs, as well as old age, the most common cause of

hearing loss (1972, pp. 248-9).

Newby, who concurs with Davis and Silverman (1964, pp. 110-112), states that diseases which may cause perceptive hearing impairment include measles, mumps, scarlet fever, diptheria, whooping cough, influenza and any of the unnamed viral infections. Newby also states that infections of the spinal fluid, such as those that occur in cases of meningitis and encephalitis, can also cause hearing impairment (1958, p. 48).

Most of the authors who wrote on the causes of deafness refer to nonorganic or functional hearing loss. Davis and Silverman in 1964 explained functional hearing loss in the following way:

> In such cases there is a partial or total inability to hear, although there is no structural change in the auditory apparatus itself. The nerve impulses initiated in the ear by sound waves do actually reach the brain, but they are not consciously heard. Such deafness is technically called psychogenic dysacusis. The person suffering from it is sometimes said to be functionally deaf. (p. 118)

Whatever the causes for the onset of deafness, a child who is its victim is additionally handicapped by severe learning disabilities.

DEAFNESS AND SUBSEQUENT LEARNING DISABILITIES

The extent of the learning ability of a hearing impaired child is contingent upon his degree of deafness and whether he was prelingually or postlingually deafened. That is to say, if the child is hard of hearing, his ability to

learn language has the possibility of being much greater than his peer who is profoundly deaf, who does not receive speech sounds clearly enough through his hearing to develop language (Mindel and Vernon, 1971, p. 31).

Kirk, in 1972, made the following statement regarding the education of deaf children:

> The important factor to remember in educating deaf children is that their major deficiency is not so much lack of hearing as inability to develop speech and language through the sense of hearing. (p. 257)

According to Mindel and Vernon (1971), there are three component parts of language: the sound system, which comprises recurrent patterns of vocalizing; grammar, the system by which words are arranged into forms and sequences to convey additional concepts over and above the dictionary meaning of the words; and finally, semantics, the use of language to organize experience and thought (pp. 49-53).

Myklebust in 1964 categorized the hierarchies of experience into the levels of sensation, perception, imagery symbolization and conceptualization (p. 224). He says that this classification emphasizes that if the level of sensation is impaired, as in deafness, then all categories above this level are also altered to some degree (p. 224). Education of the hearing impaired child therefore must be cognizant of the degree of the lack of sensation and extent to which this loss has affected the child's perception. Myklebust (1964) states that it is the levels of symbolization and conceptualization that are most affected. As well, certain

types of abstract behavior are impeded (p. 229).

According to Levine, "To be born without the ability to hear is to be born without the natural ability to acquire verbal language; and without verbal language, normal human development is blocked" (1960, p. 27).

The greatest handicap of deafness, is the subsequent impaired ability to acquire language. To guide a deaf child to the acquisition of language is the greatest challenge an educator can face. The development of a system of language that can be easily assimilated by a hearing impaired child has been the subject of much controversy and research since interest in education of the deaf was aroused several hundred years ago. Several systems have been developed over the years but as yet none of these has achieved total acceptance by educators of the deaf.

MODES OF COMMUNICATION

There are two major modes of communication that are used to develop language acquisition among the deaf. These are oralism and manualism.

According to Mindel and Vernon (1971), "oralism is a restricted communication technique limited to speech, speech-reading, writing, reading and amplification by hearing aids" (p. 57).

The manualism approach according to Kirk (1972) includes:

1. The language of signs, a language system consisting of formalized movements of the hands or [illegible] to express thoughts, and

2. fingerspelling using the manual alphabet, in which there is a fixed position of the five fingers for each letter of the alphabet. (p. 262)

Although these are the two main divisions of communication for the deaf, there has been considerable controversy over the years as to the manner and combination in which these systems should be used in teaching the deaf to communicate.

Kirk (1972) gives the most objective explanation of the differences in these two approaches to communicate with the deaf. Kirk states there are three basic approaches to communicating with the deaf. These approaches are:

1. The Oral Approach refers to the method of instruction which uses speech, speechreading, use of residual hearing, reading and writing. School programs which adhere to this approach do not use or encourage the use of the language of signs or fingerspelling on the assumption that manual communication will inhibit the child's learning of language and oral skills and impede his adjustment to the hearing world.

2. The Combined Approach, often referred to as the Rochester Method since its establishment at the Rochester, New York, School in 1878, is an approach which combines the oral approach with simultaneous use of fingerspelling. The teacher using this approach spells every word near her face as she says it.

3. The Simultaneous Approach refers to the simultaneous use of oral communication, fingerspelling, and the language of signs (some words are fingerspelled, others are given by signs). A discrepancy may occur in using the simultaneous method since the order of words and the syntax of the language of signs do not conform to those of English. In most

> cases it is impossible to form different words to show plurals, verb tenses, etc. However, attempts are currently underway to modify the syntax of the language of signs so that it corresponds more closely to English syntax. (p. 266)

Educators of the deaf appear to have very strong, contradictory opinions about which approach is the most beneficial not only for communication but also for the acquisition of a language system (DiCarlo, 1964, pp. 25-31).

There appears to be a consensus of opinion on only one aspect of communicating with the deaf, that sign language, by itself, is not sufficient to teach the English language. Myklebust (1964) gives an explanation for this conclusion when he states that because the manual system of signs is an ideographic language system, characterized by its use of a part of the object to represent the whole object, in comparison with verbal symbol systems it lack precision, subtlety and flexibility. It is more pictorial, less symbolic and as a system falls mainly at the level of imagery (p. 241).

Among those authors who are strong proponents of oralism are DiCarlo (1964), Furth (1973), Morkovin (1967), Murphy (1967), Larsen (1967), Myklebust (1964), Pauls (1966), Streng (1955) and Newby (1958). All of these authors take the position that if the deaf child is to function in a hearing, speaking world, then the child must learn to respond to the visual stimuli of a person who is speaking to him. These authors feel that if this process is begun early enough,

the child will acquire a functional language system of English through speechreading and auditory and speech training.

There are those, however, who feel that the sole use of the oral system is not effective and therefore advocate another method of communication which combines the oral system with fingerspelling, or a method known as the Simultaneous Approach or Total Communication. This method employs some oralist techniques as well as fingerspelling and manual signs. One author who espouses the method of combining the oral system with fingerspelling is McClure (1967) who employed this technique with staff members at the Louisiana School for the Deaf. Mindel and Vernon (1961) are staunch supporters of the total communication method.

Whatever the method of communication decided upon by an educator of the deaf, the educator's problems are compounded when the student is limited not only by his deafness but by other handicaps as well.

DEAFNESS AND ADDITIONAL HANDICAPS

The handicap of deafness is often accompanied by additional handicaps which intensify the learning disabilities of the deaf child who has a multiple handicap. In a study carried out by Jensema and Mullins (1974), it was found that of the sample of deaf children involved in the study, 29 per cent were handicapped by additional disabilities

(p. 703). Other frequently cited disabilities were brain damage, cerebral palsy, epilepsy, heart disorder, perceptual motor problems and orthopedic complications (p. 704).

Myklebust (1964) attempted to explain the high incidence of multiple handicapped deaf children when he said, "The opinion is expressed that the incidence of children with multiple disabilities is on the increase, with the presumption that improved medical practice causes children to survive who previously might have expired" (p. 364). However, Myklebust admitted that it is difficult to secure conclusive evidence to support this opinion (p. 364). Myklebust felt that while there is an urgent need for the development of educational programs for multiple handicapped deaf children, the need is greatest for those having psycho-neurological learning disorders, mental retardation, visual impairment, or emotional disturbances.

According to Leenhouts (1967), the performance potential of a deaf child is already severely limited by the nature of his learning disability and when low mentality or mental retardation is superimposed upon the deafness, the chances for educational attainment are lessened in almost "geometric proportions" (p. 211). Leenhouts stresses the need for teachers who are able to cope with the overwhelming problems of educating a deaf, mentally-retarded child. The problem of educating these deaf, mentally deficient children has been tackled by Glovsky and Rigrodsky (1967) and Candland

and Conklyn (1967) who stress the development of lines of communication with these children.

In writing of deaf-blind children, Berhow (1967) emphasized the special educational problems inherent to this group. Although, he said, these children integrate better with other blind children, "their greatest handicap is deafness for it is their greatest barrier to normal relationships and mental growth in areas of concepts, reasoning power, language and speech" (p. 254). However, deaf-blindness is not a bar to achievement and Berhow says that the remaining senses and the latent mental capacity can make for educational achievement (p. 254). The accompaniment of other disabilities to deaf-blindness, such as cerebral palsy, brain damage, emotional disturbance and other physical disabilities, Berhow feels, can render a child uneducable (p. 253).

INCIDENCE OF HEARING IMPAIRED PERSONS IN CANADA

There has never been an accurate account of the number of deaf people in Canada as no national census of this group of people has ever been undertaken (Wallace, 1973, p. 5). Although Statistics Canada publishes a document entitled The Schools for the Deaf and Blind in Canada, it has never attempted to identify the total number of individuals with hearing impairment in Canada. Wallace (1973) also reports that no province in Canada has made a comprehensive attempt

to identify the number of deaf persons within its jurisdiction (p. 5). It has been estimated, however, that 0.1 per cent of the population is profoundly deaf and as high as 10 per cent have some form of hearing impairment (Wallace, 1973). The number of multiply-handicapped deaf in Canada is also unknown.

FEDERAL LEGISLATION GOVERNING THE DEAF IN CANADA

A search of innumerable government documents and requests for information from various government agencies indicates that there is no federal legislation which makes special provision for the deaf in Canada.

The only federal legislation uncovered by the researcher that has tangential implications for the hearing impaired is the Disabled Persons Act which was gazetted in 1954. This act does not specifically encompass the deaf, however, and unless these people have other disabilities they do not realize any assistance under the provisos of this piece of federal legislation.

NON-UNIVERSITY POST-SECONDARY EDUCATIONAL OPPORTUNITIES FOR THE DEAF IN CANADA

In the Canadian Study of Hard of Hearing and Deaf, Wallace (1973) discussed the performance of students who graduated from residential programs for the deaf in 1972. This researcher found that from a total of 675 students enrolled in the schools only 30 were accepted into

non-university post-secondary education programs after completing school (p. 32). A probable reason for such small numbers of students attending non-university post-secondary vocational institutions was discussed by Boatner and McClure (1965) who conducted a study on the education achievement of deaf students in the United States. These researchers found that of 93 per cent of the children polled in residential schools in the United States, 30 per cent were functionally illiterate, 60 per cent were performing below grade 5.3 elementary level and only 5 per cent achieved grade 10 level (Jacobs, 1974, p. 44). That is to say, the vast majority of deaf students were educationally ill-prepared to enter into a program of non-university post-secondary education.

Besides the relatively low level of language which students attained, Wallace (1973) comments on other sources of the problem of deaf students not progressing to types of advanced education. Other factors which he considers are: lack of principals or superintendents who have the necessary academic qualifications to teach the deaf, civil servant and union regulations hindering teacher upgrading and teachers being acquired who have no background experience in deafness (p. 33).

It has only been since the advent of the 1970's that there has been a proliferation of non-university post-secondary education programs for the deaf across Canada (Wallace, 1973).

Programs now exist in five provinces across Canada, namely, Alberta, British Columbia, Manitoba, Ontario and Quebec, but prior to their establishment deaf Canadian students had to receive their post-secondary education in the United States.

Post-secondary facilities for the deaf existed in the United States at Gallaudet College (the only degree granting university for the deaf in North America) in Washington, D.C., St. Paul's Technical Institute, Minnesota and Western Maryland College in Maryland. McCay Vernon (1973) recognized this fact when he wrote in The Deaf Canadian (Nov -Dec.) that

> One very important point must be made. Western Maryland College is more than willing to cooperate with any deaf Canadian wanting to do graduate work but Canada really should develop its own program to meet the needs of the deaf Canadian. They should not be driven to the U.S. colleges for their professional preparation unless they choose to do so. (p. 7)

Five of the provinces now have non-university post-secondary education programs across Canada.

Alberta

Alberta College in Edmonton offers programs to deaf Canadians with supportive services.

British Columbia

British Columbia instituted a program with the Vocational Institute at Vancouver City Colleges to accept graduates of the Jerico Hill School for the Deaf to carry out

post-secondary education at the technical level

Manitoba

Red River Community College in Manitoba recently introduced a program for deaf students whereas previously these students received their technical courses in St. Paul, Minnesota (Wallace, 1973, p. 45).

Ontario

Ontario provides facilities at George Brown Community College for graduates of residential schools. These facilities include notetakers, interpreters, tutors, and counsellors and a full-time coordinator.

Quebec

In Quebec plans were formulated for the establishment of a polyvalent school for the deaf controlled by the Montreal Catholic School Board.

For students who wish to obtain a degree at the Bachelor's level or at the Master's level the only option that is open to them still is to attend Gallaudet College in Washington, D.C. This institution offers degrees in arts, science and liberal arts.

AGENCIES FOR THE DEAF IN CANADA

Wallace (1973) reports that in 1973 there were about 150 organizations which worked with the hearing impaired in

Canada (pp. 80-87). These included parents' associations, sports groups, provincial associations, etc. Also included were national and regional associations such as the Canadian Association of the Deaf, the Canadian Hearing Society, the Western Institute for the Deaf and the Western Canada Association of the Deaf.

Canadian Coordinating Council on Deafness (CCCD)

In March of 1973, the Canadian Conference on Deafness and Hard of Hearing was held in Ottawa, under the auspices of the federal government. There was at this conference a consensus of opinion that there be established in Canada a strong national organization of and for the deaf and hard of hearing, an organization that would bring together under unified leadership, the many and diversified groups interested in problems related to the deaf community. Also, there was a desire expressed to have elected on a democratic basis a representative continuing group, which would encompass all provinces, and have equal representation between the deaf and hearing communities. (Proceedings of the Canada Council on Hard of Hearing and Deafness, 1973, p. 38). The organization which was formed as a result of this conference was the Canadian Coordinating Council on Deafness (CCCD). The constitution and by-laws of the CCCD were adopted in March, 1975, and the organization received a federal charter and was listed as a charitable organization with the federal

government. The CCCD does not wish to annihilate the other small groups throughout the country but to provide a forum where all organizations and associations can meet to better understand their role in relation to the total problem facing the deaf in Canada (Armstrong, 1975, p. 23).

Association of Canadian Educators of the Hearing Impaired (ACEHI)

There is one major national association for professional teachers of the deaf besides some smaller regional organizations. This major association is the Association of Canadian Educators of the Hearing Impaired (ACEHI) and was established in the early 1970's to create close relationships among educators of the deaf across Canada based on their common aims and objectives for the benefit of all the hearing handicapped in Canada. The ACEHI Journal which is the voice of the association is one of the few Canadian magazines about deaf education in Canada. Other publications concerning the deaf in Canada are The Deaf Canadian, published in Western Canada, and The Canadian, published in Ontario.

Two of the most renowned publications concerned with the deaf and deaf education in the United States are The American Annals of the Deaf and The Volta Review.

SUMMARY

Chapter II discussed the history of education of the deaf in Europe, the United States and Canada. The education

of the deaf in the United States, at its beginning, was very dependent upon European concepts of deaf education, and in turn the development of Canadian education for the hearing handicapped was dependent upon American concepts of deaf education. The first school established in Canada for education of the hearing handicapped was opened in Halifax in 1856. The most recent resident school for the hearing impaired was opened in late 1973 in London, Ontario.

Teacher training courses for those who wish to teach the hearing impaired were available in Quebec, British Columbia, Saskatchewan, Ontario, Alberta and Nova Scotia. The program in Nova Scotia is affiliated with the University of Moncton in New Brunswick.

The review of related literature indicated that the major causes of deafness were maternal rubella, heredity, prematurity, Rh incompatibility, pregnancy complications, birth trauma, inflammation of the middle ear and old age.

The chief subsequent learning disability of deafness was found to be the impaired ability to acquire a language system. The two major modes of communication that had been used to develop language acquisition among the deaf are oralism and manualism. Included in these modes were the methods of sign language, fingerspelling, the oral approach, the Combined Approach and the Simultaneous Approach or Total Communication. There appeared to be no consensus of opinion among educators of the deaf as to which was the best approach

to teach the deaf.

Deafness is often accompanied by other handicaps. Most frequently, it is accompanied by brain damage, cerebral palsy, epilepsy, heart disorder, perceptual motor problems, orthopedic complications, blindness and mental retardation.

The total number of hearing impaired individuals in Canada had never been ascertained and there was no federal legislation which made provision for the deaf in Canada.

Non-university post-secondary education programs were available to graduates of Canadian schools for the hearing impaired in Alberta, British Columbia, Manitoba, Ontario and Quebec. University level education is available to deaf Canadian students only at Gallaudet College in Washington, D.C.

In 1973, there were about 150 organizations which worked with the hearing impaired in Canada.

CHAPTER III

INSTRUMENTATION AND METHODOLOGY

Chapter II presented a review of the literature that was related to the history of education for the hearing impaired, the causes of hearing impairment and authoritative writings on the subject of educating the hearing impaired. It also included a review of research related to this study.

The content of this chapter will describe and discuss the design and development of the research instrument, a questionnaire. This chapter will also include a description of the methodology used to collect data for analysis.

INSTRUMENTATION FOR THE STUDY

Following an extensive review of literature on the schools for the hearing impaired in Canada, it was realized that a study of the industrial arts, pre-vocational and vocational programs offered to the deaf had never been previously conducted.

To determine the most appropriate type of instrument to use to collect descriptive data, a library search was made on resources that dealt with instrument design. From this library research it was decided that a properly written questionnaire would yield the kinds of data needed for analysis.

DESIGNING THE QUESTIONNAIRE

The research instrument used in this research was a questionnaire that was designed by the investigator using as a model a combination of questionnaires that were used to collect data; one was for industrial arts and the other for the education of the mentally retarded.

In conducting his study which was directed at industrial arts, Marshall (1975) used a questionnaire to collect data from participants of that study. Heggie (1974) conducted a research investigation which involved educational programs for the educable mentally retarded. To collect data for this study Heggie used a questionnaire. The questionnaire that was designed for this study was modelled after the instruments designed by both Marshall and Heggie.

Text books and reference books on instrument design were reviewed in detail. The purpose of this review was to assist the researcher in the writing of questions that contained no ambiguity, that were correctly phrased, and that were properly sequenced and grouped into categories.

The first draft of the questionnaire was placed in the hands of two educators who teach at the Newfoundland School for the Deaf. These educators who contributed to this phase of the study were the guidance counsellor and the vice-principal of the academic school. These educators were used in the study because of their knowledge of teaching the deaf, of the various instructional programs for

teaching psychomotor skills to the deaf and because they were readily available to the researcher. Following their review of the instrument they supplied the researcher with recommendations for changing the wording of a number of the questions on the research instrument. The revised instrument was then mailed to the thesis supervisor at the Department of Industrial and Vocational Education, Faculty of Education, The University of Alberta, for review and analysis. From this review two major suggestions were made. These suggestions were that a number of statements in the questionnaire be rewritten to reduce their ambiguity and that the sequence of some questions be changed so that these questions were in the proper category.

It should be pointed out with emphasis that because of time constraints forced on the researcher by the October, 1975, postal service strike, the research instrument was not reviewed by a specialist in instrument design. This lack of review by such a specialist could be considered a major weakness of the research instrument.

In its final form the instrument contained questions that asked for preliminary information in the form of background information such as: name of the participant, date, position of the participant and name of the school where the participant taught. In all, there were 29 questions on the instrument and these were divided into six major categories.

The first group of questions was asked to provide a description of the instructional programs that were offered at each of the schools that were involved in the study. The purpose of these questions was to determine the dates when the program for psychomotor skill development was first offered in each school and the agencies responsible for governing and funding these schools. Three questions in this group requested information concerning the program the participant taught, other instructors who taught the same program and the percentage of time that participants spent teaching these courses. One of the questions asked participants to identify the subjects they taught and student enrollment for each subject according to age and sex of the student.

The second group of questions asked for information that dealt with the kind of tertiary education that participants attained in the subject they taught. Participants were also asked to identify the kind of degree, diploma, or certificate they held and the area of specialization printed on their school-leaving certificate or degree.

The third group of the six groups of questions that were asked on the research instrument was concerned with the educational background, in the form of course work, that participants had completed in order to qualify as teachers of the hearing impaired. Items in this group of questions asked for information regarding the miminum number of

courses a school required a teacher to have completed in order to be employed in that school. Participants in the study were also asked to name the number of courses in deaf education that they had actually completed. Other questions in this group dealt with the predominant means of communication used by the teacher to teach vocational, pre-vocational and/or industrial arts content to their students. Participants were also asked to identify the other types of handicapped students that were being taught by them.

Questions in the fourth group asked participants to rate the educational objectives of the program on a priority basis.

The fifth group of questions was directed at the vocational, pre-vocational or industrial arts programs that were being taught in each school where participants of the study taught. These questions asked for the following information: number of class periods taught per day, number of class periods taught each week, and amount of time that each period contained. The final question in this section asked the participant to give the percentage of time that was devoted to teaching theory and practical portions of the skill development course taught.

The sixth and final group of questions asked for information on the curriculum. These questions were directed at the development of curriculum, the origin of curriculum guides used by participating teachers, and a description of

the working relationship that existed between academic staff and the vocational, pre-vocational and industrial arts staff toward related subject areas. This section also included a question which asked participants if a career education program was offered to the students with which they were involved. The final two questions in this section asked the participating teachers to describe what changes they would like to see incorporated in their particular program in order to make these programs more effective and to describe any particular problems they experienced in teaching their program.

Prior to being used in the major investigation, the research instrument was pre-tested in a pilot study. This phase of the research will be explained in detail in the next section.

PILOT STUDY

The pilot study phase of the investigation was conducted at the Newfoundland School for the Deaf. In order to conduct this study personal contact was made by the researcher with the vice-principal of the school to secure permission to involve a limited number of teachers of the school in this phase of the research.

Three instructors from the pre-vocational area and two other teachers familiar with the above area were selected to be involved in the pilot study. (The three

instructors from the pre-vocational area also participated in the major investigation). To conduct the pilot study questionnaires were distributed to each participating teacher with a covering letter that served as an introduction to the study.

One of the major purposes of the pilot study was to determine a mean time for completing the instrument. This was done by recording the time when the first participant completed the instrument and the time when the last participant submitted a completed instrument. From these two extremes a mean time of 26 minutes was established as the amount of time that would be required by participants of the major investigation to complete their instruments.

After each participant completed a questionnaire, they were invited to make recommendations and comments on the structure and format of the questions that made up the research instrument.

Pilot study participants made the following recommendations:

1. To arrange questions under major sub-headings and define such terms as, hearing impaired education, curriculum, and program objectives.
2. To restructure some questions so that the word "other" could be used to describe unlisted answers.
3. To include a section on the curriculum of the program.

4. To reword certain questions to reduce ambiguity.

These recommendations were incorporated in the final form of the research instrument. A copy of the instrument, in its final form, was forwarded to the thesis supervisor for information. A copy of the research instrument is found in Appendix C.

POPULATION AND SAMPLE

The population of teachers in the residence schools for the hearing impaired in Canada was obtained from the American Annals of the Deaf (1975, pp. 175-179). The list identified 736 teachers in Canada who teach in 12 residence schools. The major shortcoming of this list was that it did not discriminate between teachers of academic subjects and teachers of vocational, pre-vocational, or industrial arts courses in the 12 residence schools.

From an extensive library search it was found that this information was not readily available. Because of the need for this information the researcher contacted each superintendent or principal of each resident school for the deaf in Canada to determine the number of instructors in each school who taught in the following three areas: vocational education, pre-vocational education and industrial arts education. It was found that there were a total of 65 instructors who taught in the above three programs of study. A breakdown of these 65 instructors by province and school

show that: (Alberta) Alberta School for the Deaf, 3; (British Columbia) Jerico Hill School for the Deaf, 4; (Saskatchewan) Saskatchewan School for the Deaf, 2; (Manitoba) Manitoba School for the Deaf, 4; (Ontario) Sir James Whitney School, 19; Robarts School, 1; Ernest C. Drury School, 10; (Maritime Provinces) Interprovincial School for the Deaf, 19; (Newfoundland) Newfoundland School for the Deaf, 3.

The reviewer will note that the Province of Quebec is missing from the above listing. In making the telephone survey of the schools it was found that in the schools polled in Quebec there were no programs for vocational, pre-vocational or industrial arts in these schools. For this reason these schools were eliminated from the research. It should be stated though that this does not mean that students in Quebec are without training in these areas.

In conversation with the superintendents of these schools it was found that students in these schools are sent to surrounding schools where they receive their skill development courses. This practice is followed by other residence schools in Canada, even though such a program may exist at the school itself.

METHODOLOGY

Following a personal telephone call to each of the superintendents of the residence schools of the hearing

impaired in Canada, a letter was sent to each of the 9 Chief Administrators of these schools. This letter requested the cooperation of the superintendent or principal in conducting the research to permit his/her staff to participate in the research by completing a research instrument. A copy of this letter can be found in Appendix A.

Following this correspondence a letter was written to each participant. The purpose of this letter was to outline briefly the purpose of the study and the role that the participants would have in it. This letter also established a deadline date when those who were involved in the research were to return completed instruments to the superintendent for mailing. Enclosed with the questionnaires for each participant was a self-addressed, stamped envelope for the return of the completed instruments.

Initially, 7 of the 9 schools returned their questionnaires. Contact was made with the remaining 2 schools and subsequent additional questionnaires were returned. The overall percentage of return for all participants in the study was 48 per cent. All schools in the sample were represented for at least one participant from each school returned a completed questionnaire. Six of the nine schools surveyed completed and returned, all of the questionnaires which had been forwarded to them.

Completed questionnaires that were received were analyzed and the results tabulated.

TABULATION

Tables were constructed to simplify the task of analyzing the data collected. Except for some of the preliminary data and comments and personal opinion answers at the conclusion of the instrument, tables were formulated for all questions.

Most tables had the same basic format. The provinces and schools were listed horizontally in the left column and the general information was listed vertically. Each table was identified by number and a brief description.

The resultant tables were analyzed after all questionnaires were returned. The results of this analysis are tabulated and discussed in Chapter IV.

CHAPTER IV

INTRODUCTION

Chapter III provided a detailed description of the population involved in the study and described in detail the methodology used to bring the research to its conclusion.

The questionnaire that was used as the research instrument was composed of 29 items. These items were grouped into the following categories: School Background Information, Instructor Background Information, Hearing Impaired Education, Program Objectives, The Program and Curriculum. The information which was gathered with the questionnaires was compiled and tabulated. The focus of this chapter will be a descriptive analysis of the data recorded on the tables.

PRELIMINARY DATA

In order to ensure that the returns could be analyzed according to school, each participant was asked to identify the school and his/her title or position. A space was also provided for the date when the questionnaire was completed. Participants were given the option to include their name on the research instrument. The majority of the participants did include their name on the instrument.

These kind of data for analysis were contingent upon a high rate of return of questionnaires from each school. The rate of return for each school is listed below. The number in brackets following the name of each school represents the number of returned instruments over the total number of teachers teaching in vocational, pre-vocational and industrial arts programs in that school. These schools are: Jerico Hill for the Deaf (3/3); Alberta School for the Deaf (4/4); Saskatchewan School for the Deaf (2/2); Manitoba School for the Deaf (4/4); Sir James Whitney School (12/19); Robarts School (1/1); Ernest C. Drury School (1/10); Interprovincial School for the Deaf (2/19); Newfoundland School for the Deaf (3/3). Thirty-two teachers in all returned a completed questionnaire from a total of 65 teachers who were surveyed.

The following is a descriptive analysis of the information that was gathered from the responses given by participants to the six categories of the questionnaires.

SCHOOL BACKGROUND INFORMATION

There were 10 questions on the questionnaire that dealt with school background information.

Question Number 1

Question number 1 asked the participants to identify the superintendent or director of the school.

Question Number 2

The second question in this section asked for participants to identify the types of instructional programs offered in the schools where they taught. This they did by checking the appropriate box(es) on the instrument.

Data in Table II show the types of instructional programs that were offered in the 9 schools involved in the study. It is evident from data in this table that all 9 schools offered a program of studies in academic education; 6 of the schools offered vocational education; 5 schools offered pre-vocational education and 8 schools offered a program of industrial arts.

Data in Table II also show that 4 of the 9 participating schools offered programs in academic education, vocational education, pre-vocational education, industrial arts education and other. Included under others were such programs as: home economics, business education, driver training and horticulture. Both the Saskatchewan School for the Deaf and the Robarts School offered the least number of programs to their students, 2.

Question Number 3

Participants were asked to give the dates when these programs identified in Table II were first offered in the school where they taught. The dates when each of these programs were instituted in the 9 schools make up the data in Table III. These data show that academic education was the

TABLE II

TYPES OF INSTRUCTIONAL PROGRAMS OFFERED IN PARTICIPATING SCHOOLS

PROVINCE SCHOOL	PROGRAMS OFFERED					
	Academic Education	Vocational Education	Pre-Vocational Education	Industrial Arts	Other	Total
Alberta						
Alberta School for the Deaf	X		X	X	X	4
British Columbia						
Jerico Hill School for the Deaf	X	X	X	X	X	5
Saskatchewan						
Saskatchewan School for the Deaf	X	X				2
Manitoba						
Manitoba School for the Deaf	X	X	X	X	X	5
Ontario						
Sir James Whitney School	X	X	X	X	X	5
Robarts School	X			X		2
E.C. Drury School	X	X		X	X	4
Maritime Provinces						
Interprovincial School for the Deaf	X	X	X	X	X	5
Newfoundland						
Newfoundland School for the Deaf	X			X	X	3
TOTAL	9	6	5	8	7	3

first type of education offered by each of the researched schools. This type of education was offered as early as 1856 by the Interprovincial School for the Deaf while the most recent school to offer this type of education was the Robarts School in 1973. The beginning of academic education in the other schools in the study occurred at intervals in this 117 year span.

Data in Table III indicate when each school first offered academic courses to its students. As mentioned above, the Interprovincial School for the Deaf, in 1856, was the first school to offer academic education followed by The Sir James Whitney School in Belleville (1870); Jerico Hill School for the Deaf in Vancouver (1925); The Saskatchewan School for the Deaf in Saskatoon (1932); The Alberta School for the Deaf in Edmonton (1955); The Ernest C. Drury School in Milton (1963); The Newfoundland School for the Deaf in Torbay (1964); The Manitoba School for the Deaf in Winnipeg (1965); and The Robarts School in London, Ontario (1973).

Cross-referencing data from Table II with data from Table III shows that 6 of the schools offered a program of studies in vocational education. Data in Table III show that teachers in 4 of these 6 schools included the dates when vocational programs of studies was first offered in their schools. It is evident from data in Table III that 2 years after it opened, the Sir James Whitney School in 1872 offered some form of vocational education to the students. Vocational

TABLE III

DATES WHEN PROGRAM OF STUDIES WERE FIRST OFFERED
BY PARTICIPATING SCHOOLS

PROVINCE SCHOOL	BEGINNING DATE				"OTHER"								
	Academic Education	Vocational Education	Pre-Vocational Education	Industrial Arts	Exceptional	Special	Emotionally Disturbed	Aphasic	Multipally Handicapped	Home Economics	Business Education	Technical Education	Driver Education
Alberta													
Alberta School for the Deaf	1955		1956	1955						1956			
British Columbia													
Jerico Hill School	1925	1968	1970						1970				1968
Saskatchewan													
Saskatchewan School for the Deaf	1932												
Manitoba													
Manitoba School for the Deaf	1965			1965						1965	1965		
Ontario													
Sir James Whitney School	1870	1872	1930				1974	1969					
Robarts School	1973			1973									

TABLE III (Continued)

PROVINCE SCHOOL	BEGINNING DATE				"OTHER"								
	Academic Education	Vocational Education	Pre-Vocational Education	Industrial Arts	Exceptional	Special	Emotionally Disturbed	Aphasic	Multipally Handicapped	Home Economics	Business Education	Technical Education	Driver Education
E.C. Drury School	1963	1960		1970	1975	1970							
Maritime Provinces Interprovincial School for the Deaf	1856	1900	1974	1961						1961		1970	
Newfoundland Newfoundland School for the Deaf	1964			1974						1974	1974		
TOTAL	9	4	4	6	1	1	1	1	1	4	2	1	

education was offered at the Interprovincial School for the Deaf in 1900; the Ernest C. Drury School in 1966 and the Jerico Hill School for the Deaf in 1968.

Pre-vocational education for the deaf in Canada began in 1930 at the Sir James Whitney School. The next school to offer a program in pre-vocational education was the Alberta School for the Deaf (1956) followed by Jerico Hill School for the Deaf (1970) and the Interprovincial School for the Deaf (1974).

Data in Table II show that 8 of the schools in the study indicated that they offered an Industrial Arts program. Data in Table III show 5 of these schools indicated the date when these programs were first offered in their schools. These data show that industrial arts for the deaf is a relatively recent program of studies. The first school to offer industrial arts was the Alberta School for the Deaf in 1955. In 1961 the Interprovincial School for the Deaf included industrial arts as a program offering. Manitoba School for the Deaf in 1965 was the third school in Canada to have industrial arts for the hearing impaired. This school was followed by Ernest C. Drury (1970) and the Newfoundland School for the Deaf in 1974.

Other data in this table show that these participants included in the category of "other" 13 programs of study and when these were first presented. The most frequently identified program was "Home Economics."

Question Number 4

To determine the major source of funding for participating schools, teachers in the study were asked to identify on a checklist the major funding agency for their school.

Their answers showed that the major source of funds for all 9 schools involved in the study was the province. One of the schools indicated that it also received federal funds to support its programs. This was the Interprovincial School for the Deaf.

Question Number 5

To determine which agency provided direction to each school in the form of governing what the school does, those teachers involved in the study were asked who governed the program they taught.

The information that was provided showed that all 9 schools were governed by the provincial government in the province where they were located.

Question Number 6

To determine the adequacy of funding for the program that participants taught the following question was asked with a "yes-no" response, "Is your program adequately funded?"

Of the 31 teachers who responded to this question, 26 answered "yes." The remaining 5 participants responded "no."

Question Number 7

Data in Table IV show the number of teachers employed to teach vocational education, pre-vocational education, industrial arts education and "other" programs of studies in participating schools. These data show that in the 6 schools that offered a program of studies in vocational education there were 38 teachers employed. In 5 schools that offered a pre-vocational education program, 10 teachers were employed and in the 8 schools that included industrial arts, 10 teachers were employed.

In the schools that were involved in the research there were 7 teachers employed to teach "other" courses. A list of the subjects in the other category can be found in Table VI.

Question Number 8

This question asked participants of the study to identify the program of studies that they taught.

Data in Table V show the programs of study that teachers who completed a research instrument taught. Cross-referencing data from Table V with data from Table IV shows that there were a number of teachers employed in participating schools who taught in more than one program.

Data that makes up Table V illustrate that 17 participants indicated that they taught vocational education, 6 taught pre-vocational education, 7 taught industrial arts and 9 taught in other related areas.

TABLE IV

NUMBER OF INSTRUCTORS EMPLOYED IN PROGRAM OFFERED IN PARTICIPATING SCHOOLS

PROVINCE SCHOOL	Programs Offered				
	Vocational Education	Pre-Vocational Education	Industrial Arts	Other	TOTAL
Alberta					
Alberta School for the Deaf		1	1	1	3
British Columbia[1]					
Jerico Hill School for the Deaf	1/2	1 1/2	1	1	4
Saskatchewan					
Saskatchewan School for the Deaf	2				2
Manitoba[1]					
Manitoba School for the Deaf	1/2	1 1/2	1	1	4
Ontario					
Sir James Whitney School	15	2	2		19
Robarts School			1		1
E.C. Drury School	7		2	1	10
Maritime Provinces					
Interprovincial School for the Deaf	13	4	1	1	19
Newfoundland					
Newfoundland School for the Deaf			1	2	3
TOTAL	39	10	10	7	65

[1]In these schools a teacher was employed to teach vocational and pre-vocational education.

TABLE V

PROGRAMS OF STUDY THAT PARTICIPANTS TAUGHT

PROVINCE SCHOOL	Program of Study				
	Vocational Education	Pre-Vocational Education	Industrial Arts	Other	TOTAL
Alberta					
Alberta School for the Deaf		2	1	1	4
British Columbia					
Jerico Hill School for the Deaf	1	3	1	1	6
Saskatchewan					
Saskatchewan School for the Deaf	2				2
Manitoba					
Manitoba School for the Deaf	1	1	1	2	5
Ontario					
Sir James Whitney School	10		2	3	15
Robarts School			1		1
E.C. Drury School	1				1
Maritime Provinces					
Interprovincial School for the Deaf	2				2
Newfoundland					
Newfoundland School for the Deaf			1	2	3
TOTAL	17	6	7	9	

Question Number 9

On the research instrument participants were asked to list the subjects they taught and the enrollment for each subject by age and sex. Participants were given a range of ages to use, for instance, the age range for students in group 1 was from 10-12 years of age.

Data in Table VI show that there were 31 different courses that were offered in vocational education, pre-vocational education, industrial arts and "other" in the 9 schools that were involved in the research. These data can be interpreted in the following manner: for the Alberta School for the Deaf, courses in photography, graphic arts, woodworking, machine shop, academics, home economics, typing and business practice were offered to the students. The number of students in each course varied from 11 in machine shop to 58 in home economics. The average age of male and female students was age group 3. That is to say, most students enrolled in these subjects in this school were between the ages of 16-18 years old.

Using the course in photography as an example there were 25 students enrolled who were in age group 3, the 16-18 year old age group. It is evident from returned data that there is a wide variety of courses in vocational education, pre-vocational education and industrial arts that were offered in the 9 research schools. The course with the highest frequency was woodworking which was taught in 6

TABLE VI

TYPES OF COURSES OFFERED IN PARTICIPATING SCHOOLS ACCORDING TO ENROLLMENT, SEX AND AGE

COURSES TAUGHT	PROVINCES / SCHOOLS								
	Alberta A.S.D.[A]	British Columbia Jerico Hill[B]	Saskatchewan S.S.D.[C]	Manitoba M.S.D.[D]	Ontario Whitney[E] School	Ontario Roberts[F] School	Ontario Drury[G] School	Maritime Provinces I.S.D.[H]	Newfoundland N.S.D.[I]
	AGE				SEX			NUMBER	
	M F	M F	M F	M F	M F	M F	M F	M F	M F
	# A # A	# A # A	# A # A	# A # A	# A # A	# A # A	# A # A	# A # A	# A # A
TYPING	24 2 3 14 2 3			2 3 7 3	3 3 34 2 3 4			24 2 3 34 2 3	
BUSINESS PRACTICE	20 3 20 3				30 2 3 4			6 3 20 3	
FILING								10 3 20 3	
KEY PUNCH							12		
SEWING		35 1 2 3			70 2 3 4				

TABLE VI (Continued)

COURSES TAUGHT	PROVINCES: Alberta A.S.D.[A]	British Columbia Jericó Hill[B]	Saskatchewan S.S.D.[C]	Manitoba M.S.D.[D]	Ontario Whitney[E] School	Ontario Roberts[F] School	Ontario Drury[G] School	SCHOOLS: Maritime Provinces I.S.D.[H]	Newfoundland N.S.D.[I]
GENERAL SHOP	AGE: M 56 A 1 2 3				SEX: M 37 A 1 2 3	F 4 A 1	NUMBER: M F	M F	M F
DRIVER TRAINING	M 12 A 3	F 8 A 3							
HORTICULTURE	M 30 A 2 3								
LIFE SKILLS				M 8 A 3 4	F 5 A 3 4				
PLASTICS			M 9 A 2 3	F 4 A 2 3					

TABLE VI (Continued)

COURSES TAUGHT	PROVINCES / SCHOOLS								
	Alberta A.S.D.[A]	British Columbia Jarico Hill[B]	Saskatchewan S.S.D.[C]	Manitoba M.S.D.[D]	Ontario Whitney[E] School	Ontario Roberts[F] School	Ontario Drury[G] School	Maritime Provinces I.S.D.[H]	Newfoundland N.S.D.[I]
	AGE / SEX / NUMBER								
	M F	M P	M F	M P	M F	M P	M P	M P	M P
	A A	A A	A A	A A	A A	A A	A A	A A	A A
CRAFTS		15							
		12							
UPHOLSTERY		5 3							
FOODS				21		25			
				1234		234			
DRESS MAKING				21			9		
				1234			345		
HOME ECONOMICS	29 29					62		24	34
	123 123					234		123	123

TABLE VI (Continued)

COURSES TAUGHT	PROVINCES: Alberta A.S.D.[A]	British Columbia Jerico Hill[B]	Saskatchewan S.S.D.[C]	Manitoba M.S.D.[D]	Ontario Whitney[E] School	SCHOOLS: Ontario Roberts[F] School	Ontario Denny[G] School	Maritime Provinces I.S.D.[H]	Newfoundland M.S.D.[I]

AGE / SEX / NUMBER

	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
	# A	# A	# A	# A	# A	# A	# A	# A	# A	# A	# A	# A	# A	# A	# A	# A	# A	# A
CERAMICS											1						10 2	15 3
WELDING					15 2 3						28 2 3 4							
AUTO BODY											16 3 4							
MACHINE SHOP 10	1 2 3	1	3		15 2 3		23 1 3		46 1 2									
ACADEMICS 23	3 4	3	3 4				4 3 4	3 3 4	13 3 4									

TABLE VI (Continued)

COURSES TAUGHT	PROVINCES / SCHOOLS								
	Alberta	British Columbia	Saskatchewan	Manitoba	Ontario	Ontario	Ontario	Maritime Provinces	Newfoundland
	A.S.D.[A]	Jerico Hill[B]	S.S.D.[C]	M.S.D.[D]	Whitney[E] School	Roberts[F] School	Drury[G] School	I.S.D.[H]	N.S.D.[I]

COURSES TAUGHT	AGE												SEX								NUMBER									
	M		F		M		F		M		F		M		F		M		F		M		F		M		F		M	
	#	A	#	A	#	A	#	A	#	A	#	A	#	A	#	A	#	A	#	A	#	A	#	A	#	A	#	A	#	A
SEWING																	14	3 4	3	3										
WOOD-WORKING	23	1 2 3	22	1 2 3	20	2 3			20	2 3			23	2 3			46	1 2											28	2 3	30	2 3
ELECTRI-CITY					20	2 3							10	2 3																
POWER MECHANICS									6	3																				
HOME MECHANICS													10	2 3																

TABLE VI (Continued)

COURSES TAUGHT	PROVINCES: Alberta A.S.D.[A]	British Columbia Jericho Hill[B]	Saskatchewan S.S.D.[C]	Manitoba M.S.D.[D]	SCHOOLS: Ontario Whitney School[E]	Ontario Roberts School[F]	Ontario Drury School[G]	Maritime Provinces I.S.D.[H]	Newfoundland N.S.D.[I]
PHOTOGRAPHY	13 M, 3 A, 12 F, 3 A	7 M, 2 3 A			14 M, 3 4 A, 3 F, 3 A			1 A	8 M, 3 A, 20 F, 3 A
GRAPHIC ARTS	12 M, 3 A, 13 F, 3 A	2 M, 2 A	7 M, 1 3 A	11 M, 3 4 A, 6 F, 3 4 A			35 M, 2 3 4 A, 9 F, 2 3 A		
DRAFTING		20 M, 2 3 A	10 M, 2 3 A	7 M, 1 3 A	3 M, 3 A	6 M, 3 A, 2 F, 3 A			
PRINTING									
PRESS WORK					3 4 A				

TABLE VI (Continued)

COURSES TAUGHT	PROVINCES / SCHOOLS								
	Alberta	British Columbia	Saskatchewan	Manitoba	Ontario	Ontario	Ontario	Maritime Provinces	Newfoundland
	A.S.D.[A]	Jerico Hill[B]	S.S.D.[C]	M.S.D.[D]	Whitney[E] School	Roberts[F] School	Drury[G] School	I.S.D.[H]	N.S.D.[I]

	AGE																															
	M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F	
	#	A	#	A	#	A	#	A	#	A	#	A	#	A	#	A	#	A	#	A	#	A	#	A	#	A	#	A	#	A	#	A
JOB EXPERIENCE					5	3 4																										

A. Alberta School for the Deaf
B. Jerico Hill School for the Deaf
C. Saskatchewan School for the Deaf
D. Manitoba School for the Deaf
E. Sir James Whitney School
F. Roberts School
G. E.C. Drury School
H. Interprovincial School for the Deaf
I. Newfoundland School for the Deaf

The number of students enrolled in the course.

A. The number used here is the age group of students.

1 10-12
2 13-15
3 16-18
4 19-21
5 22-up

schools. There were a number of courses that were taught in only 1 school.

Question Number 10

One of the questions on the research instrument asked participants to list the percentage of time that they spent teaching vocational education, pre-vocational education, industrial arts and other subjects. The data collected from this question are presented in Table VII.

Data in this table show that of the 32 teachers who provided information about the percentage of time that they spent teaching a course where psychomotor skills are developed, 17 said they spent their time teaching vocational education subjects. Of these, 13 indicated that they spent between 90-100 per cent of their time in this subject area, 2 between 80-89 per cent, 1 between 50-59 per cent and 1 teacher indicated that 0-19 per cent of the teacher's time was devoted to teaching vocational education.

Other data in this table show that 6 teachers spent their time in teaching pre-vocational subjects. This time ranged from a maximum, for 2 teachers, of 90-100 per cent to a minimum of 20-29 per cent for 1 teacher.

Of the 7 teachers who stated they taught industrial arts, 4 reported that they devoted 90-100 per cent of their time teaching industrial arts. One participant stated that between 80-89 per cent of his teaching time was spent teaching industrial arts and 2 reported they spent 70-79 per cent

TABLE VII

PERCENTAGE OF TIME PARTICIPANTS SPEND TEACHING VOCATIONAL, PRE-VOCATIONAL AND INDUSTRIAL ARTS EDUCATION

SCHOOL	Percentage of time teaching									PROGRAM
	90-100	80-89	70-79	60-69	50-59	40-49	30-39	20-29	0-19	
Alberta School for the Deaf										V.E.
	1						1	1		P.V.
			1							I.A.
				1						O.
Jerico Hill School	1									V.E.
	1			1						P.V.
	1									I.A.
						1				O.
Saskatchewan School for the Deaf	2									V.E.
										P.V.
										I.A.
										O.
Manitoba School for the Deaf					1					V.E.
					1					P.V.
	1									I.A.
			1					1		O.
Sir James Whitney School	7	2							1	V.E.
										P.V.
	2							1	2	I.A.
										O.
Robarts School										V.E.
										P.V.
		1								I.A.
										O.
E.C. Drury School	1									V.E.
										P.V.
										I.A.
										O.
Interprovincial School for the Deaf	2									V.E.
										P.V.
										I.A.
										O.
Newfoundland School for the Deaf										V.E.
										P.V.
			1							I.A.
			2							O.

V.E.-Vocational Education; P.V.-Pre-Vocational Education; I.A.-Industrial Arts; O.-Other

teaching industrial arts. It would appear from these data that the 7 industrial arts teachers spent the majority of their time teaching in their shops and laboratories.

INSTRUCTOR BACKGROUND INFORMATION

The second category of questions on the research instrument were designed to provide information on the professional and experimental background of those who were involved in the study. To present these data Table VIII, IX and X were designed.

Question Number 11

Participants were asked to check the institution or means by which they were able to acquire the necessary competencies to teach their program.

Data from Table VIII show that in some instances participants attended more than 1 institute or received their training in a variety of ways; 24 attended university, 17 attended teachers' colleges and 11 stated that they acquired their skills in industry. Six of the teachers trained at the apprenticeship level and 5 worked on the master level in industry. Other competencies were acquired at various other institutions or schools.

Question Number 12

Participants were asked to state the area of study in which they received a certificate, diploma or degree and

TABLE VIII

FORMAL AND INFORMAL TERTIARY INSTITUTIONS WHERE PARTICIPANTS SECURED COMPETENCIES TO TEACH

PROVINCE SCHOOL	Formal and Informal Tertiary Institutions										
	University	Community College	Teachers' College	Technical Institute	Trade School	Trade College	Industry	At apprenticeship level	At Master's level	Other	TOTAL
Alberta											
Alberta School for the Deaf	3						2			1	6
British Columbia											
Jerico Hill School for the Deaf	4	1			1		1	1	1		9
Saskatchewan											
Saskatchewan School for the Deaf	1		1	1	1			1			5
Manitoba											
Manitoba School for the Deaf	3	2	2	1	1		1				11
Ontario											
Sir James Whitney School	9	2	11	3	1		5	3	2		36
Robarts School	1		1								2
E.C. Drury School			1	1			1	1			4
Maritime Provinces											
Interprovincial School for the Deaf		1	1	1		1	1		2	2	9
Newfoundland											
Newfoundland School for the Deaf	3					1				1	6
TOTAL	24	6	17	7	4	2	11	6	5	4	86

the area of study for which they were certified.

These data comprise the content of Tables IX and X. Table IX includes the number of degrees, diplomas and certificates attained by those who completed this portion of the questionnaire. Data in Table X show the area of specialization for each of the above.

An interpretation of Table IX reveals that there are 34 certificates held by the teachers and 18 baccalaureates. Table X shows that for the 32 teachers who returned completed questionnaires, a number of these participants had more than 1 area of specialization. Seven teachers listed academic education as their area of specialty, 8 listed vocational education, 7 industrial arts, 3 arts, and 2 in business education. Six of the participants listed home economics as their specialization, 5 deaf education, 4 agriculture and 1 each in drafting, graphic arts and electronics.

HEARING IMPAIRED EDUCATION

It will be recalled that there were six categories of questions on the research instrument. Questions in the third category were designed to collect data on hearing impaired education obtained by participants of the study.

Question Number 13A, 13B

The first of this 2-part question asked participants if there were a number of courses that were required by

TABLE IX

NUMBER OF DEGREES, DIPLOMAS AND CERTIFICATES ATTAINED BY PARTICIPANTS

PROVINCE SCHOOL	Degrees, Diplomas and Certificates							
	B.A.	B.A. (Ed.)	B.Ed.	B.P.E.	B.Sc.	Diploma	Certificate	TOTAL
Alberta								
Alberta School for the Deaf			2		2			4
British Columbia								
Jerico Hill School for the Deaf			1			1	3	5
Saskatchewan								
Saskatchewan School for the Deaf							2	2
Manitoba								
Manitoba School for the Deaf	1		1	1	1	1	4	9
Ontario								
Sir James Whitney School	2					1	19	22
Robarts School							2	2
E.C. Drury School	1						1	2
Maritime Provinces								
Interprovincial School for the Deaf							2	2
Newfoundland								
Newfoundland School for the Deaf		2				1	1	4
TOTAL	4	2	4	1	3	4	34	52

TABLE X

AREA OF SPECIALIZATION OBTAINED BY THE PARTICIPATING TEACHERS

PROVINCE SCHOOL	Area of Specialization											
	Academic Education	Vocational Education	Industrial Arts	Arts	Business Education	Agriculture	Home Economics	Electronics	Deaf Education	Graphic Arts	Drafting	TOTAL
Alberta												
Alberta School for the Deaf		1	1				1					3
British Columbia												
Jerico Hill School for the Deaf		2	1			2						5
Saskatchewan												
Saskatchewan School for the Deaf		2										2
Manitoba												
Manitoba School for the Deaf	2		1	1	1		1	1				7
Ontario												
Sir James Whitney School	1	3	2	2		2	3		5		1	19
Robarts School	1		1									2
E.C. Drury School										1		1
Maritime Provinces												
Interprovincial School for the Deaf	1						1					2
Newfoundland												
Newfoundland School for the Deaf	2		1		1							4
TOTAL	7	8	7	3	2	4	6	1	5	1	1	45

their governing agency to work with hearing impaired students. The second part of this question asked the participants to give the number of courses that were required, if any.

Data in Table XI show that 3 of the 9 schools surveyed did not have a minimum number of courses required of their teachers to teach in that school. These schools were Alberta School for the Deaf, Jerico Hill School for the Deaf and Newfoundland School for the Deaf. Participants from 2 schools indicated that a minimum number of courses were required by the school but they did not specify the exact number of courses that had to be taken. These two schools were Ernest C. Drury School and Interprovincial School for the Deaf. Participants in 3 of the researched schools, The Saskatchewan School for the Deaf, the Manitoba School for the Deaf and the Sir James Whitney School, stated that a minimum 5 courses in deaf education were required to teach in the school where they taught. One participant from Robarts School said a minimum of 9 courses in deaf education were required for one to teach in this particular school.

Question Number 14

Teachers who participated in the study were asked to indicate the number of courses that they had taken in deaf education.

TABLE XI

NUMBER OF COURSES REQUIRED IN DEAF EDUCATION FOR PARTICIPANTS TO TEACH AND THE NUMBER COMPLETED

PROVINCE SCHOOL	Number of courses completed							
	Number of courses required	1-3	4-6	7-9	10-12	13-More	None	TOTAL
Alberta								
Alberta School[1] for the Deaf	Nil	2					1	3
British Columbia[2]								
Jerico Hill School for the Deaf	Nil	2						2
Saskatchewan								
Saskatchewan School for the Deaf	5	1	1					2
Manitoba								
Manitoba School for the Deaf	5	1	2	1				4
Ontario[3]								
Sir James Whitney School	5	2	3		3	2	2	12
Robarts School	9			1				1
E.C. Drury School	Yes							
Maritime Provinces[4]								
Interprovincial School for the Deaf	Yes	1					1	2
Newfoundland								
Newfoundland School for the Deaf	Nil			2			1	3
TOTAL		9	6	4	3	2	5	29

[1]In this school a teacher was required to take 1 undesignated course.
[2]A teacher was required to take a sign language course.
[3]Five full university courses were required.
[4]A teacher training program was required but the number of courses required was not given.

Other data in Table XI show that 9 of the 32 participants completed 1-3 courses that were directed at the education of the deaf. At one end of the continuum were 2 teachers who said they had completed 13 or more courses in deaf education and at the opposite end there were 5 teachers who replied that they did not have any such courses.

Question Number 15

To determine the predominant means of communication used by research participants in teaching the students in their class, the teachers were asked to select from a checklist the method they used. These data are shown in Table XII, Predominate Means of Communication Used by Participants.

It was found that teachers in all researched schools with the exception of those 3 from Ontario, use total communication as the predominant means of communicating with their students. The teachers from the schools in Ontario involved in the study used fingerspelling, oral communication, sign language and total communication, to communicate with their students. These data also show that total communication was used by most of the research participants.

Question Number 16A, 16B

One of the questions of this 2-part question on the research instrument was used to determine whether those

TABLE XII

PREDOMINANT MEANS OF COMMUNICATION USED BY PARTICIPANTS

PROVINCE SCHOOL	Means of Communication				
	Fingerspelling	Oral Communication	Sign Language	Total Communication	OTHER
Alberta					
Alberta School for the Deaf				3	
British Columbia					
Jerico Hill School for the Deaf				4	
Saskatchewan					
Saskatchewan School for the Deaf				2	
Manitoba					
Manitoba School for the Deaf				4	
Ontario					
Sir James Whitney School	9	8	1	2	
Robarts School	1	1			
E.C. Drury School	1	1		1	
Maritime Provinces					
Interprovincial School for the Deaf				2	
Newfoundland					
Newfoundland School for the Deaf				3	
TOTAL	11	10	1	21	

involved in the study taught students with other handicaps. From the data collected with this question that are presented in Table XIII it becomes readily apparent that participants taught students who had other handicaps besides being hearing impaired. The most common types of students taught were students who were deaf-mentally retarded" or "deaf-cerebral palsy."

Twenty-five of the 32 teachers who participated in the study stated that they taught students who were multi-handicapped. Of the 25 participants who taught multi-handicapped deaf students, 19 participants taught students who were deaf-mentally retarded, 19 taught deaf-cerebral palsy students, 17 of the participants taught deaf, other handicaps, 10 taught aphasic students and 1 taught a deaf blind student.

A graphic presentation of this information can be found in Table XIII.

PROGRAM OBJECTIVES

The fourth major category of questions on the research instrument dealt with the program objectives.

Question Number 17

In considering their own programs, the teachers who participated in the study were asked to prioritize in descending order the program objectives listed on the questionnaire.

TABLE XIII

TYPES OF OTHER HANDICAPPED CHILDREN TAUGHT
IN ADDITION TO HEARING IMPAIRED STUDENTS

PROVINCE SCHOOL	Other Handicapped Students Taught					
	Deaf Blind	Deaf Mentally Retarded	Deaf Cerebral Palsy	Aphasic	Deaf Other Handicaps	TOTAL
Alberta						
Alberta School for the Deaf		2	1		1	4
British Columbia						
Jericó Hill School for the Deaf	1	3	3		4	11
Saskatchewan						
Saskatchewan School for the Deaf		2			2	4
Manitoba						
Manitoba School for the Deaf		2	2		1	5
Ontario						
Sir James Whitney School		8	10	10	6	34
Robarts School						
E.C. Drury School		1			1	2
Maritime Provinces						
Interprovincial School for the Deaf					2	2
Newfoundland						
Newfoundland School for the Deaf		1	3			4
TOTAL	1	19	19	10	17	66

Table XIV was designed and a frequency was compiled which showed the relationship between the program objective and the priority rating given that objective by the participants in vocational, pre-vocational and industrial arts education and other psychomotor skill development teachers. For vocational teachers skill development was the educational objective which received highest priority by 4 of these teachers who participated in the study. Three teachers gave it a priority of 2, 2 a rating of 3, 2 rated it fourth, 2 teachers rated it fifth, and no teachers rated it sixth or more on the scale.

It can be seen by this example how the other objectives of personal development, social development, saleable skills, work habits, work attitudes and "other" were rated by the participants in the areas they taught. A graphic representation of these priorities is given in Table XIV, A, B, C, D.

THE PROGRAM

The fifth category of questions on the research instrument included questions that dealt with the amount of time the participants spent teaching vocational, pre-vocational and industrial arts programs of studies.

Question Number 18

Participants of the study were asked how many class periods per day they taught. The information collected from

TABLE XIV A

FREQUENCY TABLE OF PROGRAM OBJECTIVES AND THEIR PRIORITY RATINGS

	Program Objectives for Vocational Teachers								
		Skill Development	Personal Development	Social Development	Saleable Skills	Work Habits	Work Attitudes	Other	
								Language Skills	Mathematical Skills
PRIORITY RATING	1*	4	4	0	3	2	3		
	2	3	2	1	2	5	3		
	3	2	2	4	0	3	2		
	4	2	3	2	2	1	2		
	5	2	2	5	0	1	2		
	6		1	2	5	1	1		
	7								
	8								

*1 - highest priority
↓
8 - lowest priority

Fourteen vocational teachers responded to this question.

TABLE XIV B

FREQUENCY TABLE OF PROGRAM OBJECTIVES AND [illegible] PRIORITY RATINGS

Program Objectives for Pre-Vocational Teachers

PRIORITY RATING	Skill Development	Personal Development	Social Development	Saleable Skills	Work Habits	Other: Work Attitudes	Other: Language Skills	Other: Mathematical Skills
1*	1					2		
2	1				2			
3		1		1	1			
4		1	1					
5			1			1		
6				2				
7								
8								

*1 - highest priority
↓
8 - lowest priority

Three pre-vocational teachers reponded to this question.

TABLE XIV C

FREQUENCY TABLE OF PROGRAM OBJECTIVES AND THEIR PRIORITY RATINGS

Program Objectives for Vocational Teachers									
		Skill Development	Personal Development	Social Development	Saleable Skills	Work Habits	Work Attitudes	Other	
								Language Skills	Mathematical Skills
PRIORITY RATING	1*	0	3		0	2	1	1	
	2	1	0	2	0	1	2		1
	3	2	2		0	1	2		
	4	0	1	2	0	3	1		
	5	3	1	1	1		1		
	6			2	5				
	7	1			0				
	8				1				

*1 - highest priority
↓
8 - lowest priority

Seven Industrial Arts teachers responded to this question.

TABLE XIV D

FREQUENCY TABLE OF PROGRAM OBJECTIVES AND THEIR PRIORITY RATINGS

	Program Objectives for Other Teachers								
								Other	
PRIORITY RATING	Skill Development	Personal Development	Social Development	Saleable Skills	Work Habits	Work Attitudes	Language Skills	Mathematical Skills
1*	2	1					1	
2		1	1		2			
3		1	1			2		
4		1	1		2			
5	1		1	1		1		
6	1			2		1		
7				1				
8								

*1 - highest priority
↓
8 - lowest priority

Four other teachers responded to this question.

this question comprise the data in Table XV.

From these data it can be seen that 12 participating teachers taught between 5-6 periods per day; 11 taught between 7-8 periods per day; 5 taught between 3-4 periods per day and 4 taught 0-2 periods per day.

Question Number 19

A related question asked participants to indicate the number of class periods per week they taught. This information is presented in Table XVI.

From data in this table it is evident that only 1 teacher who participated in the study taught between 1-5 class periods per week, and 2 other teachers taught 6-8 periods and 19-21 periods per week, respectively. At the opposite end of the teaching continuum were 15 teachers who taught more than 25 periods per week.

Question Number 20

Related to the time or the number of periods taught per week is the number of minutes that were in a class period. To secure this information teachers were asked to check in an appropriate box the number of minutes in each class period.

Data in Table XVII show the number of minutes for each class period of the 32 participants in the study. These data show that of the 32 teachers, 14 stated that there were between 31-40 minutes for their programs of vocational,

TABLE XV

NUMBER OF CLASS PERIODS PARTICIPANTS TEACH EACH DAY

PROVINCE SCHOOL	Number of class Periods Taught Per Day			
	0-2	3-4	5-6	7-8
Alberta				
Alberta School for the Deaf		1	2	
British Columbia				
Jerico Hill School for the Deaf			4	
Saskatchewan				
Saskatchewan School for the Deaf	2			
Manitoba				
Manitoba School for the Deaf	1		2	1
Ontario				
Sir James Whitney	1	1		10
Robarts School			1	
E.C. Drury			1	
Maritime Provinces				
Interprovincial School for the Deaf			2	
Newfoundland				
Newfoundland School for the Deaf		3		
TOTAL	4	5	12	11

TABLE XVI

NUMBER OF CLASS PERIODS PARTICIPANTS TAUGHT PER WEEK

PROVINCE SCHOOL	Number of class periods taught per week							
	1-15	6-8	9-11	12-15	16-18	19-21	22-25	OTHER
Alberta								
Alberta School for the Deaf					1			2
British Columbia								
Jerico Hill School for the Deaf					1			
Saskatchewan								
Saskatchewan School for the Deaf			2					
Manitoba								
Manitoba School for the Deaf	1				1			2
Ontario								
Sir James Whitney School		1				1		10
Robarts School							1	
E.C. Drury School								1
Maritime Provinces								
Interprovincial School for the Deaf							2	
Newfoundland								
Newfoundland School for the Deaf				3				
TOTAL	1	1	2	3	3	1	6	15

TABLE XVII

NUMBER OF MINUTES FOR EACH CLASS PERIOD PARTICIPANTS TAUGHT

PROVINCE SCHOOL	Number of minutes for each period taught					
	0-30	31-40	41-50	51-60	61-90	OTHER
Alberta						
Alberta School for the Deaf		1	1		1	
British Columbia						
Jerico Hill School for the Deaf			4			
Saskatchewan						
Saskatchewan School for the Deaf						2
Manitoba						
Manitoba School for the Deaf		3	1			
Ontario						
Sir James Whitney School		10	1		1	
Robarts School			1			
E.C. Drury School			1			
Maritime Provinces						
Interprovincial School for the Deaf				2		
Newfoundland						
Newfoundland School for the Deaf				3		
TOTAL	0	14	9	5	2	2

pre-vocational and industrial arts education. Nine of the participants said that their class periods were between 41-50 minutes long, 5 participants said their class periods were between 51-60 minutes, 2 teachers taught classes that were between 61-90 minutes, and 2 taught class periods that were over 90 minutes in duration.

Question Number 21

There are two components involved in teaching psychomotor skill development courses, theory and practice. To determine the amount of time research participants spent in teaching theory and practice a question was designed to secure this information.

Table XVIII includes data on the amount of time research participants devoted to teaching both theory and practice.

From data in this table, 14 teachers indicated that they spent between 21-31 per cent of their class time teaching theory; 9 devoted between 10-20 per cent of their class time teaching theory; 5 between 41-50 per cent; and 3 participants taught theory between 31-40 per cent of their class time.

The greater proportion of class time for all participants was devoted to teaching the practical aspects of their course. Six of the 32 participants indicated they spent between 50-60 per cent of their class time teaching

TABLE XVIII

AMOUNT OF TIME PARTICIPANTS SPENT TEACHING THEORY AND PRACTICE PORTIONS OF A COURSE

	THEORY				PRACTICAL			
	10-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90
Alberta								
Alberta School for the Deaf	1	1	1			1	1	1
British Columbia								
Jerico Hill School for the Deaf		1	1	2	2	1	1	
Saskatchewan								
Saskatchewan School for the Deaf		2					2	
Manitoba								
Manitoba School for the Deaf	3	1					2	2
Ontario								
Sir James Whitney School	4	5		2	2	2	7	
Robarts School				1	1			
E.C. Drury School			1	1	1	1		
Maritime Provinces								
Interprovincial School for the Deaf		2					2	
Newfoundland								
Newfoundland School for the Deaf	1	2				1	1	1
TOTAL	9	14	3	5	6	5	16	4

practice to their students. Five teachers spent between 61-70 per cent of their class time teaching this aspect of the course, 16 teachers spent 71-80 per cent of their class time, and 4 participants spent 81-90 per cent of their time teaching practice to their students.

CURRICULUM

The last category of questions on the research instrument was devoted to curriculum and its development in schools for the hearing impaired. The information that was collected by the questions of this section of the questionnaire make up the final part of the chapter.

Question Number 22

The participants of the study were asked to reply "yes" or "no" if curriculum guides had been developed for the program they taught.

From the information presented in Table XIX it can be seen that of the 32 participants who responded to this question, 10 teachers stated that no curriculum guides had been developed for their program, and 22 teachers stated that guides had been developed. The data that are presented in this table illustrate that 7 of the 9 schools surveyed used curriculum guides.

TABLE XIX

USE OF CURRICULUM GUIDES AND THEIR ORIGIN IN PARTICIPATING SCHOOLS

PROVINCE SCHOOL	Curriculum Guide Use		Curriculum Guide Origin		
	No	Yes	Department of Education	Teacher Developed	School Developed
Alberta					
Alberta School for the Deaf	1	2	2		
British Columbia					
Jerico Hill School for the Deaf	2	2	1	1	
Saskatchewan					
Saskatchewan School for the Deaf		2			2
Manitoba					
Manitoba School for the Deaf	2	2		1	1
Ontario					
Sir James Whitney School		12	3	1	6
Robarts School	1				
E.C. Drury School		1		1	
Maritime Provinces					
Interprovincial School for the Deaf	1	1			1
Newfoundland					
Newfoundland School for the Deaf	3				
TOTAL	10	22	6	4	10

Question Number 23

The teachers involved in the study were asked to give the origin of the guides that were developed.

Table XIX show that of the 20 teachers who responded to this question, 10 replied that the guides were developed in the school, 6 stated the guides originated from the provincial Department of Education of that province, and 4 of the teachers stated they developed their own curriculum.

Question Number 24

One of the questions asked the participants if these curriculum guides had been developed in conjunction with the ongoing academic program of their school.

Of the 20 participants who responded to this question, 14 teachers stated that their curriculum guides were developed in conjunction with the academic program. Six teachers stated that their curriculum guides were not developed in conjunction with the academic program of their school.

Question Number 25

A question was included on the instrument to determine if the academic teacher in the research school worked on related subject matter for the course participants taught. To this question cooperating teachers could have responded either "yes" or "no." Of the 32 participants who responded to this question, 18 answered "yes" and the remaining 14 answered "no." From the responses to this question it would

appear that in some schools there is a lack of cooperation between the academic teacher and teachers of psychomotor skill development courses.

Question Number 26

A related question to the kinds of cooperation that exists between academic teachers and "trade" teachers was a question that looked at the adequacy of communication between the academic department and the "trade" department of participating schools. In responding to this question research teachers were asked to check an appropriate box either "yes" or "no."

Of the 30 participants who answered this question, 14 checked "yes" that there was adequate communication between the academic department in which they taught. Sixteen teachers checked "no."

It would appear from these data that the communication between the academic departments and departments where participants taught could be improved in the quality of education offered to the students of the research schools is to be maximized.

Question Number 27

To determine if resident schools for the hearing impaired in Canada offered a career education program to their students the participants were asked to check "yes" or

"no" to this question.

Of the 9 residence schools for the hearing impaired which participated in the study, participants from 6 of these schools responded that there was a career education program offered to the students in these schools. The remaining 3 schools indicated that they did not have a career education program. These schools were: The Robarts School and the Ernest C. Drury School, both located in Ontario and the Newfoundland School for the Deaf.

Question Number 28

This question was asked to determine the changes that participating teachers would recommend in order to make their programs more effective. Participants were asked to describe briefly these changes.

The responses that were written in by participants were categorized under 4 headings. These responses are placed in rank order under each major heading and the number of respondents who made that comment are shown in brackets.

Physical School Environment

More space (4)

More adequate and accessible materials (3)

More adequate security for equipment (2)

More teaching aids (1)

Administrative Responsibilities

Better class grouping (5)

Better time tabling (3)

Need for Semesterization (3)

Availability of a guidance counsellor (3)

More staff (2)

More funds (1)

Design of the Program

Need for work experience program (4)

More student options (1)

More skill oriented programs (1)

Communication

Better communication with administrative staff (3)

Better communication with academic staff (3)

Question Number 29

Question number 29 asked the teachers who participated in the study to respond to the following question: "Are there any particular problems that you experience in the teaching of your course?" Space was provided where participants could elaborate on their response to this question.

The problems that participants in the study stated that they experienced in their program were compiled in a list which is given below. The number in brackets after each problem experience signifies the number of participants

who listed this difficulty in the implementation of their program. These problems are arranged under general headings.

Physical school environment

Lack of adequate space for teaching and for equipment (5)

Lack of security for equipment (2)

Lack of textbooks (1)

Lack of supplies (1)

Time Considerations

Insufficient time allotments for the program (3)

Lack of time for proper equipment maintenance (3)

Administrative Problems

Insufficient communication with administration (2)

Too much paperwork (1)

Program difficulties

Students lack of basic experiences due to their handicaps (3)

Technical language difficulties with students (3)

Making the program flexible enough to meet varied student needs (2)

Difficulty in keeping up with current modern technological advances (2)

CHAPTER V

Chapter I of this report provided a brief overview of the nature of the problem under study and the methodology that was used to conduct the report. Chapter II presented a review of the literature and related research while Chapter III discussed the instrumentation and methodology that was employed in this study. Chapter IV presented an analysis of the findings of the study.

The final chapter of this thesis is divided into 3 sections. The first section is a summary of the research methodology. The second section includes observations and conclusions stemming from the research. The third and final section includes recommendations for further study.

SUMMARY

The Problem

The major objective of this research was a survey of the vocational, pre-vocational and industrial arts programs in residence schools for the hearing impaired in Canada.

In addition to the major objective, the study sought to describe in detail the educational background of the teachers who taught psychomotor skill development courses to auditory handicapped children in each of the schools

selected to participate in the research; to describe the kinds of courses for which psychomotor skills were taught to the hearing impaired so that they could develop the necessary competencies to enter the world of work as a beginning worker; and to determine the program objectives for teachers who taught skill development courses to students enrolled in each of the schools that participated in the research.

The population for this study included all 39 schools and classes that offered a program of studies for the hearing impaired in Canada. From this population a stratified sample was taken that included only those schools that were classified as a residential school and which offered vocational, pre-vocational or industrial arts courses. Teachers from 9 of the residence schools in Canada formed the sample of this study.

Related Literature

A review of research literature revealed that there were no other studies undertaken in Canada that were directly related to this research. This review also revealed that there was a very limited amount of professional literature pertaining to vocational, pre-vocational and industrial arts programs for the hearing handicapped in Canada.

The Canadian aspects of the review of the literature included a history of deaf education in Canada, Canadian

teacher training programs for the hearing handicapped; the incidence of hearing impaired persons in Canada; federal legislation governing the deaf in Canada; non-university post-secondary educational opportunities for the deaf in Canada; and a review of the agencies which serve the deaf in Canada.

Methodology

The research instrument that was used to collect the data for this study was a questionnaire. Prior to using the research instrument in the major study, the questionnaire was reviewed by two qualified educators of the deaf in Newfoundland and by the thesis supervisor.

The research instrument was pretested in a pilot study that included 5 teachers at the Newfoundland School for the Deaf who were familiar with the psychomotor skill development courses that were taught at that school.

The results of the pilot study indicated that sections of the research questionnaire needed further clarification and modification before being used in the major study. The recommendations of the pilot study made by participants were included in the final draft of the research instrument. A list of residence schools in Canada was obtained from the American Annals of the Deaf (1975). Personal contact was initiated with each principal or superintendent for these schools. It was found that of the 12 resident schools listed in 1975 there were only 11 residence schools for the

hearing impaired in 1976. Also, 2 of these schools did not offer any vocational, pre-vocational or industrial arts course of studies to its students in the school. Therefore there were 9 participating schools in the study.

During May of 1976, the questionnaire was distributed to the teachers of 9 of the resident schools for the hearing handicapped in Canada that were selected to be involved in the study. The information obtained from the completed questionnaire was tabulated and described in detail in Chapter IV.

A Description of the Vocational, Pre-Vocational and Industrial Arts Program of Studies in Each Participating School

This portion of the chapter is divided into 9 sections, one section for each school.

Alberta School for the Deaf

Location: Edmonton, Alberta

Date school established: 1955

Academic Program established: 1955

Method of communication: Total communication

Major funding agency: Provincial Government of Alberta

Major governing agency: Provincial Government of Alberta

Pre-Vocational Education

Program established: 1956

Number of teachers: 1

Minimum course enrollment: 25

Maximum course enrollment: 40

Average number of periods taught per day: 5-6

Courses of studies: Photography, Graphic Arts, Typing, Business Practice

Industrial Arts

Program established: 1955

Number of teachers: 1

Minimum course enrollment: 14

Maximum course enrollment: 45

Average number of periods taught per day: 3-4

Courses of studies: Woodworking, Machine Shop

The teachers at this school received their training and education through one or a combination of the following: university, industry, or the armed forces. Among them, these teachers held 4 Bachelor degrees. Although this school does not require its teachers to have completed a minimum number of courses in deaf education, 2 of the participants from this school had received training in this area. Two of the teachers had program curriculum guides which originated from the Department of Education in Alberta. The programs of these participants were funded and governed by the Provincial Government of Alberta.

Jerico Hill School for the Deaf

Location: Vancouver, British Columbia

Date school established: 1925

Academic Program established: 1925

Method of communication: Total communication

Major funding agency: Provincial Government of British Columbia

Major governing agency: Provincial Government of British Columbia

Vocational Education

Program established: 1968

Number of teachers: 1/2

Minimum course enrollment: 5

Maximum course enrollment: 20

Average number of periods per day taught: 5-6

Course of Studies: Not complete

Pre-Vocational Education

Program established: 1970

Number of teachers: 1 1/2

Minimum course enrollment: 5

Maximum course enrollment: 33

Average number of periods taught per day: 5-6

Courses of studies: Horticulture, Driver Taining, Crafts, and others, not complete

Industrial Arts

Program established: 1925

Number of teachers: 1

Minimum course enrollment: 6

Maximum course enrollment: 51

Average number of periods taught per day: 5-6

Courses of studies: General Shop

The teachers at Jerico Hill received their education and training in one or a combination of the following: university, community college, trade school and industry. Among them, these teachers held 1 degree, 1 diploma and 3 certificates. Although this school did not require its teachers to have completed a minimum number of courses in deaf education, 2 of the participants from this school had received taining in this area. Two of the teachers have program curriculum guides which originated from the provincial department of education or were teacher developed.

Saskatchewan School for the Deaf

Location: Saskatoon, Saskatchewan

Date school established: 1932

Academic Program established: 1932

Method of communication: Total communication

Major funding agency: Provincial Government of Saskatchewan

Major governing agency: Provincial Government of Saskatchewan

Vocational Education

Program established: 1932

Number of teachers: 2

Minimum course enrollment: 2

Maximum course enrollment: 20

Average number of periods per day: ?

Courses of Studies: Metal Work, Plastics, Power Mechanics, Welding, Woodwork, Graphic Arts, Photography, Drafting

Employed to teach this program are two vocational education teachers who received their training from one or a combination of the following: university, teachers' college, technical institute, trade school and industry. Each of these teachers held a certificate. This school required its teachers to have completed a minimum of 5 courses in deaf education and each of the teachers received training in this area. Both of these teachers have program curriculum guides which originated from the school.

Manitoba School for the Deaf

Location: Winnipeg, Manitoba

Date school established: 1965

Academic Program established: 1965

Method of communication: Total communication

Major funding agency: Provincial Government of Manitoba

Major governing agency: Provincial Government of Manitoba

Vocational Education

Program established: 1965

Number of teachers: 1/2

Minimum course enrollment: 7

Maximum course enrollment: 13

Average number of periods per day: 5-6

Courses of Studies: N/A

Pre-Vocational Education

Program established: 1965

Number of teachers: 1/2

Minimum class enrollment: 7

Maximum class enrollment: 13

Average number of periods taught per day: 5-6

Courses of Studies: Life Skills, Mathematics

Industrial Arts

Program established: 1965

Number of teachers: 1

Minimum course enrollment: 7

Maximum course enrollment: 23

Average number of periods taught per day: 5-6

Courses of Studies: Metals, Drafting, Plastics, Leather, Graphic Arts, Woodworking, Home Mechanics, Electrical Wiring

The teachers at this school received their training and education through one or a combination of the following:

university, community college, teachers' college, technical institute, trade school, and industry. Among them, these teachers held 4 Bachelor degrees, 1 diploma and 4 certificates. This school required its teachers to have completed a minimum of 5 courses in deaf education and all 4 of the participants had received some training in this area. Two of these participants had program curriculum guides which were teacher or school developed.

Sir James Whitney School

Location: Belleville, Ontario

Date school established: 1870

Academic Program established: 1870

Method of Communication: Fingerspelling, Oral, Sign Language, Total Communication

Major funding agency: Provincial Government of Ontario

Major governing agency: Provincial Government of Ontario

Vocational Education

Program established: 1872

Number of teachers: 15

Minimum course enrollment: 11

Maximum course enrollment: 70

Average number of periods per day: 7-8

Courses of Studies: Senior Sewing, Upholstery, Graphic Arts, Auto Body, Machine Shop, Welding, Finishing, Cooking, Typing, Business Education

Pre-Vocational Education

Program established: 1930

Number of teachers: 2

Minimum course enrollment: not available

Maximum course enrollment: not available

Average number of periods taught per day: not available

Courses of Studies: not available

Industrial Arts

Program established: 1970

Number of teachers: 2

Minimum course enrollment: 4

Maximum course enrollment: 46

Average number of periods taught per day: 7-8

Courses of Studies: Woodworking, Metal Crafts, and Communication

The teachers at St. James Whitney received their training and education from one or a combination of the following: university, community college, teachers' college, technical institute, trade school and industry. Among them, these teachers held 2 degrees, 1 diploma and 19 certificates. This school required its teachers to complete 5 full university equivalent courses in deaf education and only 2 of the 12 participants who completed a questionnaire did not have any training in this area. All 12 of the teachers have curriculum guides of which 3 were developed by the Department

of Education, 1 was developed by the teacher and 6 were developed through the school.

Robarts School

Location: London, Ontario

Date school established: 1973

Academic Program established: 1973

Method of communication: Fingerspelling and oral

Major funding agency: Provincial Government of Ontario

Major governing agency: Provincial Government of Ontario

Industrial Arts

Program established: 1973

Number of teachers: 1

Minimum course enrollment: 8

Maximum course enrollment: 41

Average number of periods taught per day: 5-6

Courses of studies: Drafting, General Shop

Employed to teach the Industrial Arts program, was an industrial arts teacher who received his training at university and teachers' college and held two certificates. This school required its teachers to have completed a minimum of 9 courses in deaf education and this participant had received training in this area. This participant had no program curriculum guide developed for him.

Ernest C. Drury School

Location: Milton, Ontario

Date school established: 1963

Academic Program established: 1963

Method of communication: Fingerspelling and oral

Major funding agency: Provincial Government of Ontario

Major governing agency: Provincial Government of Ontario

Vocational Education

Program established: 1966

Number of teachers: 10

Minimum course enrollment: 44

Maximum course enrollment: 44

Average number of periods per day: 5-6

Courses of Studies: Graphic Arts (Incomplete)

Industrial Arts

Program established: 1966

Number of teachers: 2

Minimum course enrollment: not available

Maximum course enrollment: not available

Average number of periods taught per day: not available

Courses of Studies: not available

The 1 teacher from this school who was a participant in the study received his education through teachers' college, technical institute and industry. He held a degree and a certificate. This school required its teachers to have

completed a minimum of 5 courses in deaf education, however, this participant had received no formal training in this area. This participant had a program curriculum guide which was teacher developed.

Interprovincial School for the Deaf

Location: Amherst, Nova Scotia

Date school established: 1856

Academic Program established: 1956

Method of communication: Total communication

Major funding agency: Provincial Government of Nova Scotia and the Federal Government of Canada

Major governing agency: Provincial Government of Nova Scotia

Vocational Education

Program established: 1900

Number of teachers: 13

Minimum course enrollment: 12

Maximum course enrollment: 18

Average number of periods per day: 5-6

Courses of Studies: Dressmaking, Key Punch (Incomplete)

Pre-Vocational Education

Program established: 1974

Number of teachers: 4

Minimum course enrollment: not available

Maximum course enrollment: not available

Average number of periods taught per day: not available

Courses of Studies: not available

Industrial Arts

Program established: 1961

Number of teachers: 1

Minimum course enrollment: not available

Maximum course enrollment: not available

Average number of periods taught per day: not available

Courses of Studies: not available

The 2 teachers who participated in this study received their qualification and training from one or a combination of community college, teachers' college, technical institute, trades college, industry and an academy. One of the teachers had 2 certificates. This school required its teachers to complete a teacher training program in deaf education and one of the teachers had this training. One of the teachers had a curriculum guide which was developed at the school.

Newfoundland School for the Deaf

Location: Torbay, Newfoundland

Date school established: 1964

Academic Program established: 1964

Method of communication: Total communication

Major funding agency: Provincial Government of Newfoundland

Major governing agency: Provincial Government of Newfoundland

Industrial Arts

Program established: 1974

Number of teachers: 1

Minimum course enrollment: 26

Maximum course enrollment: 58

Average number of periods taught per day: 3

Courses of studies: Woodworking, Ceramics, Photography

The teachers at the Newfoundland School for the Deaf received their education and training in one or a combination of the following: university, trade school and commercial school. Among them, these teachers held 2 degrees, 1 graduate diploma and 1 certificate. Although this school did not require its teachers to complete a minimum number of courses in deaf education, 2 of the participants had received training in this area.

None of the teachers had curriculum guides which were developed for their programs.

RECOMMENDATIONS

The following recommendations are made for further study.

Because of the lack of information in the professional literature on the historical development of resident schools for the deaf and the psychomotor skill development courses these schools offer, the following recommendations are made to the administrators of each of the 9 schools involved in the study.

Recommendation:

1. It is recommended that each school prepare a history of the development of the school, the programs offered, the courses of studies that make up their programs, background information on the teaching staff of the school, and information on the length of class time for all courses. It is also recommended that the document that is prepared be sent to all public and university libraries in the country.

One of the major purposes for the inclusion of skill development classes in the psychomotor domain is for the graduates of such a program to acquire entry level skills for a selected trade. Normally, the success of such a program is determined by the number of graduates who are employed in the trade for which they were prepared.

Recommendation:

2. It is recommended that a longitudinal follow-up study be conducted to determine the number of

hearing handicapped graduates of vocational education, and pre-vocational education programs who have entered the trade for which they were prepared. This study should be undertaken at an interval of 1, 3, and 5 years after graduation.

Statistics on the hearing impaired in Canada are currently integrated by statistical reporting agencies under the generic term of "handicapped." Because of this reporting procedure it is difficult to identify the incidence with which hearing impairment exists in this nation.

Recommendation:

3. It is recommended that agencies reporting statistics on the handicapped in Canada include a distinct category in their reporting procedure for the hearing impaired.

This research investigation was limited to the program of studies in vocational education, pre-vocational education, and industrial arts education that were offered to students enrolled in resident schools in Canada. Because of this limitation these kinds of programs that were offered in both day classes and in non-resident schools were not investigated.

Recommendation:

4. It is recommended that a further research investigation be conducted on the kinds of program of studies that are offered in vocational education, pre-vocational education and in industrial arts education to hearing handicapped students enrolled in day classes and in non-resident schools in Canada.

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Appendix A

Letter sent to the Superintendents of the
Residence Schools for the Hearing Impaired in Canada

19 Exeter Avenue,
St. John's, Nfld.
May 15, 1976.

Dear

At the present time I am an Industrial Arts teacher at the Nfld. School for the Deaf. I am also enrolled in the Faculty of Graduate Studies and Research at the University of Alberta where I am completing the requirements for a Master of Education degree in Industrial Arts. Part of these requirements include the completion of a formal thesis.

The title of my thesis is "A Descriptive Analysis of Vocational, Pre-Vocational and Industrial Arts Programs in Residential Schools for the Hearing Impaired in Canada." Part of the research design for this study involves all industrial arts, pre-vocational and vocational teachers in the residence schools for the hearing impaired in Canada.

The purpose of this correspondence is to secure your cooperation by permitting your teachers in the above mentioned areas to be included in the study. Their responsibility will be to complete a 29 item questionnaire and return it to the researcher.

Enclosed is a sufficient number of questionnaires for the teachers on your staff. If you have no objection to your teachers completing this questionnaire, please distribute them, and I would appreciate it if you could return them to me by June 5, 1976, in the enclosed stamped addressed envelope.

All data collected will be treated as privileged information.

May I express my appreciation for your anticipated assistance in the completion and early return of the research instrument by the above date.

Sincerely,

James Dunne.

Appendix B

Letter sent to Teachers Who Participated in the Study

19 Exeter Avenue,
St. John's, Nfld.
May 15, 1976.

Dear Fellow Teacher:

At the present time I am a full-time Industrial Arts Teacher at the Nfld. School for the Deaf. I am also enrolled at the Faculty of Graduate Studies and Research of the University of Alberta where I am completing the requirements for a Master of Education degree in Industrial Arts. Part of these requirements include the completion of a formal thesis.

The title of my thesis is "A Descriptive Analysis of Vocational, Pre-Vocational and Industrial Arts Programs in Residential Schools for the Hearing Impaired in Canada." Part of the research design for this study involves all the teachers in the above mentioned areas.

Enclosed is a copy of the research instrument which I would like for you to complete. It should take approximately one half hour. Since there are a limited amount of people working in these areas across Canada I am depending on a high number of returns. I would be most grateful if you would offer your cooperation and complete the enclosed questionnaire and return it to your superintendent or principal before June 5, 1976.

Being a full-time teacher myself I realize that your time at this point in the school year is at a premium. Thank you for your kind assistance and once the study is complete a copy of the abstract will be made available to you.

Sincerely,

James Dunne

Encl.

Appendix C

Research Instrument

SURVEY OF THE VOCATIONAL, PRE-VOCATIONAL AND INDUSTRIAL ARTS PROGRAMS OF THE RESIDENCE HEARING IMPAIRED SCHOOLS IN CANADA

Date: _____

Participant's Name (optional): _____

Title or Position: _____

Name of School: _____

SCHOOL BACKGROUND INFORMATION:

1. Name of Superintendent or Director: _____

2. Types of Instructional Programs offered. (Check appropriate box(es)):

Academic Education	☐
Vocational Education	☐
Pre-Vocational Education	☐
Industrial Arts Education	☐
Other	☐

2A. If there are other programs which do not fit the above classifications, please list these below:

_____

3. Give the date when these programs were first offered:

	Date
Academic Education	_____
Vocational Education	_____
Pre-Vocational Education	_____

	Date
Industrial Arts Education	_____ _____
Others_____	_____
_____	_____
_____	_____
_____	_____

4. Is the program you teach supported by (Check most applicable):

- Provincial Funds ☐
- Federal Funds ☐
- Municipal Funds ☐
- Private Funds ☐
- Service Club Funds ☐
- Other Funds (Specify) _____
  _____

5. Is the program you teach governed? (Check most applicable):

- Provincially ☐
- Federally ☐
- Municipally ☐
- Privately ☐
- Service Club ☐
- Other _____
  _____

6. In your opinion, is your program adequately funded? Yes ☐
   No ☐

7. Number of instructors in your area employed to teach:

(insert number)

Vocational Education ☐

Pre-Vocational Education ☐

Industrial Arts ☐

Other (e.g., B.E., H.E.)
Specify: _____ ☐

8. Please check the program of studies that you teach:

Vocational Education ☐

Pre-Vocational Education ☐

Industrial Arts ☐

Other (Specify) _____

_____

9. Please list the subjects that you teach and the enrollment in each subject according to age and sex:

Course Taught	Total Enrollment	Number of Male	*Age group(s)	Number of Female	*Age Group(s)
eg. Woodworking	85	56	2, 3	29	3

*Please use the appropriate number to identify the age groups:

1 10 - 12
2 13 - 15
3 16 - 18
4 19 - 21
5 22 - up

10. Percentage of your time that you spend teaching:

Vocational Education _____%

Pre-Vocational Education _____%

Industrial Arts Education _____%

Other (Specify) _____%

INSTRUCTOR BACKGROUND INFORMATION: (Answer only the questions that pertain to yourself).

11. Identify the type of institution of higher learning where you acquired the skills to teach your program. Please check appropriate ☐ 's.

University ☐

Community College ☐

Teachers College ☐

Technical Institute ☐

Trade School ☐

Trade College ☐

Industry ☐

- at apprenticeship level ☐

- at Master's level ☐

No formal training ☐

Other (Please specify) ☐

_____

12. Please state degree(s), diploma(s), or certificates(s) attained and the field of study:

Degree, Diploma, Certificate	Field of Study
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

HEARING IMPAIRED EDUCATION

13A. As a teacher of hearing impaired students is there a minimum number of courses that you had to take in deaf education in order to teach:

Yes ☐

No ☐

13B. If yes, please give the number of courses that were required: _____

14. Please check the appropriate ☐ to indicate the number of courses you have taken directed at deaf education:

1 - 3 ☐

4 - 6 ☐

7 - 9 ☐

10 - 12 ☐

13 - more ☐

None ☐

15. Please check the predominate means of communication that you use while teaching:

- Finger Spelling ☐
- Oral Communication ☐
- Sign Language ☐
- Total Communication ☐
- Other (Specify) ☐

16A. In addition to teaching hearing impaired students do you also teach students who are multi-handicapped deaf also?

- Yes ☐
- No ☐

16B. If yes, please check the appropriate boxes that describe these other handicaps:

- Deaf-blind ☐
- Deaf-mentally retarded ☐
- Deaf-cerebral palsy ☐
- Aphasic ☐
- Deaf-other handicaps ☐

Please list _____

_____

PROGRAM OBJECTIVES

17. Please identify the objectives for your program by numbering the appropriate box(es) in order of priority. (Start with #1 as highest priority).

- Skill development ☐
- Personal development ☐
- Social development ☐

Saleable skills ☐
Work habits ☐
Work attitudes ☐
Others (Specify) ☐
_____ ☐
_____ ☐
_____ ☐

THE PROGRAM

18. How many class periods per day do you teach?

0 - 2 ☐
3 - 4 ☐
5 - 6 ☐
7 - 8 ☐
Other ☐
_____ ☐

19. How many class periods per week do you teach? (Check one).

1 - 5 ☐
6 - 8 ☐
9 - 11 ☐
12 - 15 ☐
16 - 18 ☐
19 - 21 ☐
22 - 25 ☐
Other ☐

20. How many minutes are there in a class period. (Check one).

- 30 ☐
- 31 - 40 ☐
- 41 - 50 ☐
- 51 - 60 ☐
- 61 - 90 ☐
- Other_____

21. Please list the percentage of your time overall that is spent teaching theory_____and practical_____.

CURRICULUM

22. Have curriculum guides been developed that you are required to use in your program?

- Yes ☐
- No ☐

23. If yes, where did these guides originate?

_____

_____

24. Were these guides developed in conjunction with the ongoing general academic program in your school?

- Yes ☐
- No ☐

25. Does the academic teacher work on related subject matter pertaining to the course you teach?

- Yes ☐
- No ☐

26. Do you believe that there is adequate communication between the academic department and your departme..t?

Yes ☐

No ☐

27. Is there a career education program offered to the students at your school?

Yes ☐

No ☐

28. What changes would you like to see to make your program more effective? (Describe as briefly as possible).

_____

_____

_____

_____

_____

29. Are there any particular problems that you experience in the teaching of your course?

_____

_____

_____

_____

_____

VITA

Personal:

Birth:	January 31, 1949, St. John's, Newfoundland
Citizenship:	Canadian
Marital Status:	Married
Dependents:	One: Andrea Kathleen
Permanent Address:	19 Exeter Avenue St. John's, Newfoundland A1B 1R1

Education:

1963-66	Attended Brother Rice High School in St. John's and received high school matriculation in 1966
1966-67	Attended Memorial University of Newfoundland
1967-68	Attended St. Augustine's College in Toronto
1968-70	Attended Memorial University of Newfoundland
1972	Received B.A.(Ed.) from Memorial University of Newfoundland
1973	Received a Certificate in Carpentry from College of Trades and Technology in St. John's, by Extension
1973-74	Attended University of Alberta enrolled in a Graduate Diploma in Industrial and Vocational Education. Received the Graduate Diploma in Spring, 1974
1974-76	Enrolled in the Faculty of Graduate Studies and Research at the University of Alberta for M.Ed. in Industrial and Vocational Education

Thesis Title:
A Survey of Vocational, Pre-Vocational, and Industrial Arts Programs in Schools for the Hearing Impaired in Canada

1974-76 Industrial Arts Instructor at the Newfoundland School for the Deaf. Duties included implementing and setting up the programs in Industrial Arts

1976 Received M.Ed. in Industrial and Vocational Education

Organizations: 1974-75 Pre-Vocational and Industrial Arts Curriculum Committee of the Newfoundland Department of Education. Worked on the subcommittee on teacher training in Industrial Arts.

Member of Canadian Vocational Association.

President of the Newfoundland Parents' Association for Hearing Handicapped Children.

One of the founding members of the Newfoundland Coordinating Council on Deafness.

School coordinator to the Newfoundland Teachers' Association.

Member of Association of Canadian Educators of the Hearing Impaired.

Member of the Benevolent Protective Order of Elks.